October 1958

# HARVARD MEDICAL
# *ALUMNI BULLETIN*


*Doctors Afloat*


Bed of Digitalis purpurea
with Campanula (Canterbury Bells) in foreground

Not far from here are manufactured
from the powdered leaf
Pil. Digitalis (Davies, Rose)
0.1 Gram (1½ grains) or 1 U.S.P. Digitalis Unit.
They are physiologically standardized,
with an expiration date on each package.
Being Digitalis in its completeness,
this preparation comprises the
entire therapeutic value of the drug.
It provides the physician with a safe and effective
means of digitalizing the cardiac patient
and of maintaining the necessary saturation.
Security lies in prescribing the
"original bottle of 35 pills, Davies, Rose."

*Clinical samples and literature sent to physicians on request*

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D 27

*in the management of constipation* / *predictable two-way action*

*when the problem is infrequent defecation due to inadequate bowel motility*

# Peri-Colace®

*Dioctyl sodium sulfosuccinate and anthraquinone derivatives from cascara, Mead Johnson*

capsules • syrup

## provides two-way action

*gently stimulates peristalsis*
*prevents formation of hard stools*

Peri-Colace combines the mild peristaltic stimulation of Peristim* with the wetting action of Colace that keeps stools soft.

In a study of 130 hospitalized patients with a wide range of clinical conditions, Peri-Colace effectively relieved constipation in 97% of the cases. (Lamphier, T. A.: Am. J. Proct. 8:440, Dec. 1957)

*To prevent the formation of hard, difficult-to-pass stools*

## Colace

*Dioctyl sodium sulfosuccinate, Mead Johnson*

In capsules, syrup or liquid (drops).

*To save you time in instructing patients...*"Advice on Constipation" leaflets are available in two versions: Peri-Colace (Lit. 802); Colace (Lit. 801). You are cordially invited to ask your Mead Johnson representative or write us, Evansville 21, Indiana.

Mead Johnson
*Symbol of service in medicine*

PC648R

*Standardized preparation of anthraquinone derivatives from cascara sagrada, Mead Johnson

# LETTERS

## Risorgimento

To the Editor of the *Bulletin:*

Your editorial comment following William E. Hunter's letter under the caption, "Exclusive Club" on page 4 of the July issue of the *Bulletin* provoked a smile on my part. The Oliver Wendell Holmes Society was no exclusive club, for I was a member and there were many other members. I can remember only one by name and that was Harold Thomas, '15, now with the V.A. Hospital in Albany, New York, as radiologist. What I do remember very definitely, however, is the fact that I read a paper at one of the Society meetings on the subject of surgical treatment of the *cervix uteri* for sterility (may the good Lord forgive me!).

If you really wish to find out who those other admirers of the great poet-physician were I am sure there are enough survivors of that era around Boston to supply the missing links.

Stanley B. Weld, '16
Hartford, Connecticut

## Yunk-Yunk-Yunk

To the Editor of the *Bulletin:*

There is one inaccuracy [in the last *Bulletin*] I would like to point out. It is the paragraph recounting my colossal slip-of-the-tongue, when I introduced Jung as "Freud." This episode has amused my colleagues all over the world, and has been greatly embroidered and exaggerated. One version had it that I presented Jung for his degree at the Tercentenary gathering in the Harvard Yard and called him "Freud!" The fact is, it was quite a small affair in my own staff-room at the M.G.H. I was conducting a staff meeting with Jung, who was my house guest, sitting beside me. Dr. Jason Mixter entered the small room to consult me about a patient, and I simply said, "Dr. Mixter, I would like to have you meet Dr. Freud." I did not realize I had said anything amiss until I heard Jung emitting grunts like "yunk-yunk-yunk." Then it came to me, what I had done, and I was flabbergasted! Dr. Mixter says I got out of it quite well with a bit of stammering, but I never found out what excuses I made.

All this is in the cause of "Veritas."

Stanley Cobb, '14
Boston

## More About Bella

To Dr. George P. Berry:

I must say I was very much interested in the paintings you have acquired, and I am sure many others are going to be likewise.

I gleaned the following information mainly from *A Modern Herbal* by Grieve. The plant has a most interesting history and has certainly been interwoven with historical events through the centuries.

Belladonna is supposed to have been the plant that poisoned the troops of Marcus Antonius during the Parthian wars. Plutarch gives a graphic account of the strange effects that followed its use.

In his history of Scotland, Buchanan says that when Duncan I was king of Scotland, the soldiers of Macbeth poisoned a whole army of invading Danes by a liquor mixed with the infusion of belladonna which was supplied to the Danes during a truce! Suspecting nothing, the invaders drank deeply and were easily overpowered and murdered in their sleep by the Scots.

According to old legend the plant belongs to the devil who goes about trimming and tending it in his leisure and can only be diverted from its care on one night in the year. That is on Walpurgis when he is preparing for the Witch's Sabbath.

Another derivation of the term than that given by the author of "Diagnosis Deferred" is founded on the old tradition that the priests used to drink an infusion before they worshiped and invoked the aid of Bellona, the Goddess of War. The generic name of the plant, *atropa,* on the other hand, is derived from the Greek, *atropos,* one of the fates who held the shears to cut the thread of human life. This, of course, refers to its poisonous nature.

Mandrake, a species of belladonna, was used in Pliny's day as an anesthetic for operations. The sleeping potion of Juliet, which drove Romeo to suicide because he thought her dead, was a preparation from this plant.

I hope this gives you a general idea and some thoughts as to the history of belladonna.

Dale G. Friend, '35
Peter Bent Brigham Hospital

## Females Come to Vanderbilt

To the Editor of the *Bulletin:*

It was announced last spring that, for the first time, female students would be accepted at Vanderbilt Hall this September, should any care to live there. Of course, some of the girls decided to move in.

Girls are certainly seen often enough in Vanderbilt, and they are generally welcome. But none of them ever liked it so well before that they wanted to live there. At least, they seldom admitted it publicly. Few of the men could have been so bold as to issue the invitation. And now Harvard has opened the door.

The news has been received in general with a shrug of the shoulders. "*De gustibus non est disputandum,*" observed one man, who pointed out that Boston is an old hangout for bluestockings. There is no doubt that once a woman gets an idea in her head, no matter how bizarre it may seem to the masculine mind, there is no shaking it loose. The ladies are sure to be made quite welcome, even if few of their male colleagues understand just why it is that Vanderbilt's draughty corridors seem so dear to their hearts.

One theory has it that the plan is being fostered by the medical school to calm the midnight revels in Vanderbilt courtyard. Many are concerned that the ladies may meet the first autumnal outburst of "Gaudeamus Igitur" in a flying wedge, bearing cookies and cocoa. Another possibility, and perhaps a more chilling one, is that in their efforts to become members of the gang some of the girls may try to join in the singing. Hardly anyone feels that the famous anthem will be improved by adding the *voce soprano.*


## ALEVAIRE® aerosol in the home

# in bronchiectasis–

*"Thick, yellow, solid sputum which had been expectorated with difficulty became thin, colorless and liquid sputum which was expectorated with ease and gradually diminished in volume. Labored breathing and insomnia, . . . soon were replaced by easy respiration and ability to enjoy normal restful sleep."**

**CASE REPORT**

*A typical Alevaire case history*–C. S., 31 year old male with bronchiectasis and sinusitis, had had pneumonia six times. He had a continuous thick purulent postnasal drip and thick, yellowish green sputum; he expectorated at least a cupful of sputum each morning on arising. The patient was weak and debilitated, with chills and low grade fever. Bronchograms revealed advanced bronchiectasis. Antibiotics, postural drainage and expectorant cough mixtures had not helped.

Alevaire therapy was begun with one hour of direct nasal inhalation every day. After the first treatment the patient expectorated a large amount of sputum and definitely breathed easier. The nasal passages began to open, and with subsequent treatments both the sinusitis and the bronchiectasis improved. He began to breathe easier through the nose and to expel bronchial secretions more readily. His appetite improved and he felt stronger.

At the end of fourteen days he was almost completely symptom free. Alevaire was continued each night for short periods at bedtime, and the patient remained completely free of symptoms except for a light morning expectoration.

*Miller, J.B., et al.: Ann. Allergy, 12:611, Sept.-Oct., 1954.

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***has been dramatically effective in:***

- neonatal asphyxia (due to inhalation of amniotic fluid, mucus obstruction, atelectasis)
- croup • laryngitis • tracheobronchitis
- pertussis • pneumonia • bronchial asthma
- emphysema • bronchiectasis • lung abscess
- pneumoconiosis • smoke, kerosene poisoning
- poliomyelitis (respiratory complications)
- routine oxygen therapy • tracheotomy
- prevention of postoperative pulmonary complications

*Alevaire is supplied in bottles of 60 cc. for intermittent therapy and in bottles of 500 cc. for continuous inhalation therapy.*

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# LETTERS

Whatever the motivation may be, and whatever the outcome of the change, one thing is sure — medical education at Harvard is now as integrated as it can get, and any separate but equal policy has gone the way of all flesh, with speed that is perfectly deliberate. The new decision by the administration is sure to make Vanderbilt more "homey" for the bachelors, and it re-emphasizes the truth that so many of us have learned, "You can't live with women, but you can't live without them."

TERRY MALTSBERGER, '59
Vanderbilt Hall

## Johnson Foundation Grants

November 22, 1957

To Dr. Nathan M. Pusey:

The Johnson Foundation has granted financial aid in the amount of $800 to Taras Nowosiwsky now attending your School of Medicine.

Realizing that the tuition paid by the student does not fully cover the cost of training in a year, the enclosed check in the amount of $500 is sent to help defray the expense of the student to whom The Johnson Foundation has granted assistance. This is an unrestricted contribution to your operating fund.

The Johnson Foundation is a philanthropic trust, established in 1937 by the Johnson family, founders and owners of the Johnson Wax Company. The principal donor to the Foundation is S. C. Johnson & Son, Inc.

THE JOHNSON FOUNDATION
Kenford R. Nelson, Trustee

*We print below excerpts from a letter of appreciation from Dr. Berry to The Johnson Foundation and their reply:*

July 1, 1958

Dear Mr. Nelson:

The recent graduation of Taras Nowosiwsky from the Harvard Medical School provides an opportunity to express our appreciation for the scholarship awards made to this student by The Johnson Foundation.

This is a good moment to tell you a bit about what the gifts made by The Johnson Foundation to medical students at Harvard have accomplished. The story begins in 1947 when one of our medical students, James H. Jandl, whose home was in Racine, Wisconsin, first learned about your Foundation, and subsequently received from you a generous award. Dr. Jandl graduated in 1948 — ever since then he has done outstanding work in the field of medical research. He has already made important contributions to our knowledge concerning the metabolism of red blood cells. In recognition of his distinction, he has just been appointed to the Faculty of Medicine at Harvard as an Associate in Medicine. I run little risk in prophesying that the world will be hearing more about Dr. Jandl.

Now let me turn again to Taras Nowosiwsky. This Roumanian refugee came to the United States penniless and still in the early stages of learning English. To the members of our Admission Committee, he seemed to have so much promise that the decision was made to accept him even though it was realized that he had hardly mobilized the equipment needed to survive in the fierce competition of medical study at Harvard. He did have a dreadful struggle to keep up with his classmates during his first year — as a matter of fact, we asked him to repeat this year. Having done so successfully, Nowosiwsky performed increasingly well as course followed course. In some of his fourth-year work, he received honor grades. Although one should not anticipate that Dr. Nowosiwsky will become an outstanding contributor to medical science, as seems to be likely in Dr. Jandl's case, he will unquestionably develop into a valuable member of the medical profession.

It is increasingly important to illustrate the role that can be played by industry in supporting education. The way you are doing so — without attaching restrictions and seeking a *quid pro quo* — best accomplishes what I believe is your unadulterated purpose of strengthening the intellectual base of our nation. As the cost of education continues to increase, greater expenditures will be required year after year. They can be mobilized only when the public comes to realize more widely that everyone must share in the responsibility for supporting the academic enterprise. May I use The Johnson Foundation as an example?

GEORGE PACKER BERRY, M.D.
Dean

To Dr. George P. Berry:

The Trustees of The Johnson Foundation appreciate your letter of July 1 telling of two of our former grantees and their progress. Our files show that two other Harvard Medical students received grants.

Mr. Nelson has asked me to give his permission for an appropriate account of our support in the *Harvard Medical Alumni Bulletin.* I just hope that it will not result in an added flood of requests, for we are now faced with many more than we can grant.

Our files show that two other Harvard Medical students received grants. They are Grant Stelter, $500 for his Senior year (1948), and Leo Samelson, $450 for his Senior year (1951).*

Thank you for your interest.

MRS. BARBARA C. SARGENT
Secretary to Kenford R. Nelson

*The following information on these recipients of Johnson Foundation Scholarships was compiled by the Dean's Office:

Leo Samelson, '52. Born in Milwaukee but brought up in Chicago where his father is a merchant. Received the Ph.B. degree from the University of Chicago in 1948. After graduation from H.M.S., he served a year's rotating internship at the Grace Hospital in Detroit. He is now in group practice in the "soft coal world" in Pennsylvania, specializing in internal medicine.

Grant D. Stelter, '49. Born and brought up in Wisconsin. Had two years of medical school training at Jefferson Medical College where he appeared to be a student of unusual promise. Graduated from the Harvard Medical School in the top third of his class. Served a two years' rotating internship at the Presbyterian Hospital in Chicago, before entering the U. S. Army, in which he held the rank of Captain and served as Commanding Officer of a Medical Group in France.

## Martha and Jane

Lest *Bulletin* readers think that old assistant editors just fade away, we report the following:

Jane Mollman (Mrs. Peter), now living in Millstadt, Illinois, gave birth to a daughter, Sarah Chase, last June 13. She also assists Pete in various capacities in the Millstadt Enterprise printing and publishing firm.

Martha Dunn was married to Mark Percy Owen Morford, of Ceylon and Leatherhead, Surrey, England on April 5. Mark is a master at Tonbridge School in Tonbridge, and, temporarily at least, Martha has defected to the British ("We hope to be back in the U. S. for at least a year — exchange teaching").

# REGIONAL ACTIVITIES

## New York City

Benjamin W. Carey, '32, Secretary-Treasurer of the Harvard Medical Society of New York, reported that their fall meeting is scheduled for Thursday, October 30.

## Spokane

Saturday, October 11, 1958, Duncan E. Reid, M.D., Professor of Obstetrics, lectured at the meeting of the Washington State Obstetrical Society. Richard C. Miller, '41, acted as chairman of a luncheon to entertain Dr. Reid on Friday, October 10.

## Philadelphia

The Harvard Medical Alumni of the State of Pennsylvania held a Dinner Meeting at the Bellevue-Stratford Hotel on Wednesday, October 15, during the annual meeting of the Medical Society of the State of Pennsylvania. Dr. Joseph W. Gardella, Assistant Dean for Student Affairs at Harvard Medical School, was the guest speaker.

A Summary Report on

# CORTROPHIN®-ZINC

*(Corticotropin-Alpha Zinc Hydroxide)*

**Description:** A unique patented electrolytic process (developed by Organon research) produces a complex of *alpha* zinc hydroxide and corticotropin. This complex offers considerable advantages for practical ACTH therapy.

**Characteristics:** New Cortrophin-Zinc provides corticotropin of unsurpassed purity with low foreign protein content. This reduces the risk of sensitization reactions.

Since about 5% of the corticotropin is uncombined, onset of clinical response is rapid. But the balance, present as a complex of alpha zinc hydroxide, provides a prolonged action so that the effective time span of a single dose is usually several days. Injection of the new electrolytic Cortrophin-Zinc is virtually painless.

**Pharmacology:** A potent stimulator of cortical activity, Cortrophin-Zinc *does not depress* functioning of the suprarenal glands. Unlike the corticosteroids, adrenocorticotropic hormone arouses the adrenal glands to produce *natural* steroids in natural proportions. In a 5-year study of patients on ACTH therapy, no case of adrenal *or pituitary* depression or atrophy has been observed.

Because Cortrophin-Zinc is virtually painless on injection and its prolonged action obviates frequent injections, it is now practicable to use Cortrophin-Zinc in most of the indications where formerly reliance has been on corticosteroids. This freedom from apprehension of deleterious depressive effects permits clinical use of valuable hormone therapy on a broader scale than has been possible heretofore.

**Clinical Uses and Dosage:** The many published reports on the use of Cortrophin-Zinc as well as ACTH, in thousands of patients indicate its value in over 100 disorders. Most responsive have been: allergies and hypersensitivities, rheumatoid arthritis, bronchial asthma, serum sickness and inflammatory skin and eye diseases.

Dosage should be individualized, but generally initial control of symptoms is obtained with a single injection of 40 units of Cortrophin-Zinc daily, until control is evident. Maintenance dosage is generally 20 units (or less) twice a week.

Use of Cortrophin-Zinc with oral steroids is now recommended as a safety measure to supply the important suprarenal stimulation and lessen the hazard of atrophy. Periodic use of Cortrophin-Zinc is advocated with all steroid analogs, such as cortisone, hydrocortisone, prednisone, prednisolone, methylprednisone, and triamcinolone.*

**Supply:** 5-cc vials containing 40 and 20 U.S.P. units of corticotropin per cc; 1-cc ampuls containing 40 and 20 U.S.P. units of corticotropin, with sterile disposable syringes.

*Write for complete literature and bibliography containing specific dosage schedules to:

*Medical Department*

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# HARVARD MEDICAL ALUMNI BULLETIN

VOL. 33 OCTOBER 1958 NO. 1

The Cover: This picture was taken, almost directly into the sun, by Morris Rosenfeld, at the start of the 1958 Bermuda Race. Owned by Dr. George Nichols, Jr., Associate in Medicine at HMS, the 41-ft. Concordia Cutter was built in Bremen, Germany, and sailed around Denmark, Sweden and Norway before Dr. Nichols brought it to this country. He keeps it at Marblehead, and usually sails in Massachusetts Bay. See pp. 25-27 for other "doctors afloat."

# Along the Perimeter

### *The Onion Patch*

Though its ships were not among the very first to sight St. Davids Head, still, Harvard may well be proud of the showing of its medical contingent in the 1958 Bermuda race. Among those reaching the Onion Patch in the early part of the fleet were Richard Warren, '34, George Nichols, and George Clowes, '41.

### *Biophysics Doctorate*

The first candidates for the new Harvard program leading to a Ph.D. in Biophysics are expected to enroll at Harvard in the fall of 1959. (The Division of Medical Sciences currently offers the Doctorate in the 6 basic sciences.) Most of the work for the new degree will be carried on at the Longwood Quadrangle, but candidates will also study in Cambridge in the Departments of Physics, Chemistry, Biology and Mathematics and the Division of Engineering and Applied Physics.

The Biophysical Laboratory located in Building D was established 11 years ago. It has been concerned with the use of radioactive materials in the exploration of life at the cellular level, with particular interest devoted to the passage of salts such as potassium and sodium through the cell walls. The Laboratory is under the direction of Dr. Arthur K. Solomon.

A second laboratory — the Biophysics Research Laboratory — is located at the Peter Bent Brigham Hospital. Led by Dr. Bert L. Vallee, the Laboratory is exploring the molecular basis of the action of enzymes and has devoted much attention to the function and distribution of trace elements in biological systems. These studies use many of the tools of the physicist; for example, the emission spectrophotometer, the flame analyzer, the polarograph and the densitometer.

In terms of general area, Harvard's program will explore the physical chemistry of proteins, hemodynamics and capillary permeability, biological kinetics and cellular transport, and the applications of spectroscopy to the study of biological material and enzyme kinetics.

### *Get Thee to a Deanery!*

The Deanery at Vanderbilt Hall has been remodeled to provide housing for some of the 30 women students at the Medical School. The self-contained area, originally set aside to house the Dean and his family (best authority has it that no dean ever actually lived in the Deanery) will accommodate 19 students in four double and 11 single rooms. The women will share a living room and small kitchen.

Since they began to be admitted 13 years ago, women enrolled in the Harvard Medical School either have lived at home, or in apartments or rooms in the vicinity of the Medical School. A reliable private source, in an oral poll, found 10-20% of the male student body to be strongly in favor of the new arrangement, 10-20% violently opposed and the rest apparently indifferent.

### *Summer Program for Science Teachers*

One in 16 applicants were accepted for Harvard's summer school program in nuclear physics and biology, Dr. Fletcher Watson, Professor of Education and a director of the program, reported. The courses of instruction for 39 high school and college science teachers were this year supplemented by an especially diversified "extracurricular" program: Several outside speakers addressed the group; field trips were made to Harvard's biology laboratories in Cambridge where Mr. Edmund Samuels showed the group the radiological activities carried on there; a trip was made to the recently-made-critical Nuclear Reactor at M.I.T.; one Saturday, the teachers visited Woods Hole and were shown the techniques and difficulties of studying nervous and chemical reactions in a living organism by Dr. Teru Hayashi, and others; Dr. Laurence L. Robbins showed the teachers through the Radiology Department at M.G.H.

Statistics have shown a high rate of return from the 1956 and 1957 crop of graduates. They have delivered a total of 140 speeches and conducted 38 courses on Nuclear Science for other science teachers and community groups, in addition to 6 radio, and 7 television programs. Nine are now participating actively in civil defense work.

Reprinted from the Nantucket *Inquirer and Mirror* of September 12, 1958:

> Dr. Robert R. White, a summer resident of Orange Street, informed the Selectmen that he has purchased the ice cream business owned by Mrs. Kermit Roosevelt and her son. Dr. White asked that he be granted the necessary license for the ice cream truck, and the Board accordingly voted him the license, to run for a period of one year from the date of issue. They also certified there was no objection to the granting of a state Peddler's license.

Though he was not a graduate of H.M.S., those who remember Bob White at the Children's and the Brigham, and during the War, will view with respect this uncanny ability of his to adjust to the exigencies of our recent recession. No man to sit back and mope, he will obviously use his summer well, peddling a product less affected by troublesome economic swings.

## *The French Influence**

"The severity of Puritan manners had yielded somewhat to the softening influence and the polished bearing of the French officers whom their King had permitted to serve in the American Revolutionary War. In his autobiographical notes Dr. Warren gives an interesting picture of life in Boston at the close of the 18th century:"

> . . . Gentlemen's dinner-parties began early, and ended late. . . . The great care on the part of the host was to present to the guests as much ordinary wine as they could be made to drink, and then to bring forward, in succession, a variety of old wines, each having a character a little better than that which preceded. All of these had some remarkable history connected with them, the detail and discussion of which constituted an important part of social conversation.
>
> On the whole, the dinner-parties of those times must be looked on with disgust: for not only was the quantity of wine sufficient to make irreparable inroads on the physical organization, but these potations led to the greatest extravagance of language and thought; and the conversation at a dinner-party, if taken down by a stenographer, and presented to the party on the morning following, would have filled them with shame and regret.

**These excerpts have been taken from the book, "To Work in the Vineyard of Surgery, The Reminiscences of J. Collins Warren," published recently by the Harvard University Press, edited, with appendices, notes and comments by Edward D. Churchill, '20.*

"In later life, it may be well to remark, Dr. Warren became president of the Massachusetts Temperance Society, and on accession to that office, felt obliged to give away a cellar of fine wine. At some of his later dinner parties the old Negro butler used to carry around two fine silver pitchers in his hands, inquiring of each guest in turn whether he would have rain water or Cochituate water.

". . . Several years later, Cochituate water was introduced into the city, an occasion marked by a celebration which culminated in the turning on of the fountain in the Frog Pond and a speech by Daniel Webster.†"

> †The Cochituate Water Celebration on Boston Common was described with surprising eloquence in Boston City Document No. 50, 1848: "The Mayor, addressing the assembly, asked if it were their pleasure, that the water should now be introduced. An immense number of voices responded *aye;* whereupon, on the signal of the Chief Engineer, the fountain gate was gradually opened, and the water began to rise, in a strong column, increasing rapidly in height until it reached an elevation of about eighty feet . . . which produced an evident surprise on the whole of the expectant multitude. After a moment of silence, shouts rent the air, emphatically attesting the universal joy. . . . The sun was just sinking below the horizon, and its last rays tinged the summit of the watery column. The bells began to ring — cannon were fired — and rockets streamed across the sky."
>
> . . . The celebration attracted the largest audience in the history of the city up to that time. It included . . . an "Ode to Water" written by James Russell Lowell and sung by the school children, and addresses by the Hon. Nathan Hale and Mayor Josiah Quincy, Jr.
>
> Dr. John C. Warren was an interested spectator, for he had long been an agitator for the piping of pure water into Boston. . . . The new Cochituate system carried fresh water over fourteen miles by aqueduct and tunnel to the Brookline Reservoir, and thence to the Beacon Hill Reservoir, a magnificent structure supported on massive granite arches.

## *The Electrolytes Speak*

The name of James L. Gamble is almost synonymous with the study of body fluids and body fluid replacement. Although he seldom worked with patients, he had a tremendous influence on clinical practice by elucidating the basic mechanisms by which the body defends its extracellular fluid and by teaching a rational therapeutic approach to fluid maintenance and repair. His syllabus, *The Chemical Anatomy, Physiology, and Pathology of Extracellular Fluid,* never formally published in the U. S., but printed

in loose-leaf form, has literally been the Bible of a whole generation of medical students, physicians, and investigators.

As a young intern, he had watched babies die like flies of summer diarrhea, when he worked as an intern on Boston's Floating Hospital, which was really a boat in those days, with daily sailings down Boston Harbor. Doctors hoped in vain that the cooler sea air might save infants from the terrible, unexplained dehydration.

He came to this problem at a time when he could put to use the new micro methods of body fluid analysis — developed and employed by two teachers whom he particularly admired — L. J. Henderson and Otto Folin. This was the exciting time when men began to see the possibilities of using the exact measurements of basic science in studying the human body and its ills. And when, after a year in Vienna, he returned to the United States, he had changed his mind about his earlier plan of going to San Francisco. The well-appointed laboratories of Germany and Austria, and the extent to which the new techniques were being used for the benefit of the patient, had swung the pendulum, and he happily accepted the opportunity for independent research offered by Dr. John Howland in the gleaming new Harriet Lane Clinic at Johns Hopkins.

Dr. Gamble has himself written of this period:

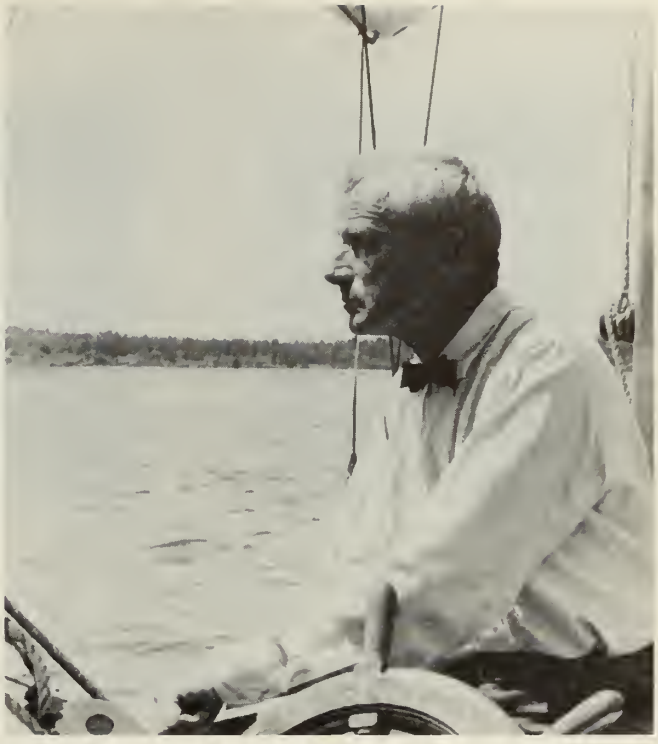
"We were enthusiastically aware of our *avant garde* position and we had a splendid time together. Dr. Howland was a most considerate and companionable chief. Although he warned me that I ought to keep up my clinical side, he indulged my desire to spend all my time in the chemistry laboratory and displayed a kindly unconcern that nothing came of it for quite a long while. My only rigidly prescribed function as a member of his department was to play golf with him on Sunday mornings. . . ."

A fluke of fortune, upon which he capitalized, permitted him in 1919 to conduct his classic and exhaustive studies on body electrolyte balance which were to become so famous. A number of epileptic children were subjected to prolonged fasting because it was found that this inhibited their seizures. This allowed Dr. Gamble to make measurements of electrolyte intake and loss under ideally controlled conditions. (Nowhere, he said, could he have so systematically starved children.) Dr. Robert Loeb has said of these studies:

"At a time when most clinical investigation consisted of the recording of endless observation based on some new method, Gamble planned a crucial experiment to elucidate basic problems of function, and applied chemical methods to this end."

Dr. Gamble was asked in 1922 to return to Harvard and to set up the Chemistry Laboratory at the Children's Hospital. The 50 papers which he published during the following three decades put biochemical thinking into a form which made it possible for doctors to conceptualize in a much clearer fashion than was formerly possible. Largely as a result of his work, infant mortality caused by diarrheal dehydration has dropped from the status of a major killer to almost nothing.

Never a precipitate publisher, one of his strongest characteristics has always been a sure feeling for knowledge gone wrong. His classic phrase was "precise misinformation," which, he said, was much more wrong because it was so much more precise. "He was one of the few research men who didn't slop over and draw conclusions on something he wasn't particularly good at," a friend said. "He kept closely to the problem at hand and let other people draw conclusions. I imagine he has barrels of material that he will never publish. He is, in the best sense of the word, a perfectionist." The famous "Gamblegrams" (he disowns the word), the large, happy graphs showing electrolyte relationships, are only the best-known example of this ability to clarify and extract the essence of a problem.



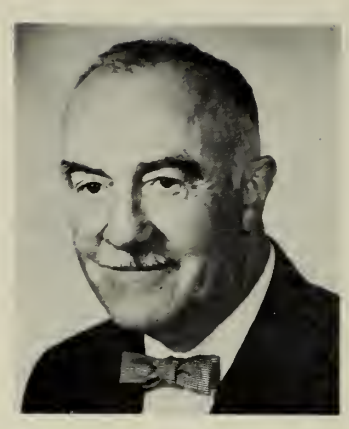
*James L. Gamble, '10, aboard the 'Torno (Ritorno a Sorrento) at Sorrento, Maine.*

Dr. Gamble virtually memorized his lectures to his students and revised and polished them each year. He gave as much thought and had as much trepidation for his third-year lecture, as for an address before the American Philosophical Society. Never an easy extemporaneous speaker, a classic economy and precision of style, wealth of content, deliberateness and quiet humor characterized his speaking as it did his writing. His manner of public speaking was once delightfully underlined when, through an unfortunate scheduling, his second-year audience had just completed the last of the final exams in pathology. They were, to understate it, in a mentally relaxed condition. Just prior to Dr. Gamble's entry, students filled his water glass with a rather strong mixture of gin and water. When the moment came, and he lifted the glass to his lips, there was no obvious reaction. As sip followed sip, the intricate interlocking concepts of electrolyte physiology unfolded clearly, deliberately, beautifully. After he downed the last drop at the end of the lecture, still without visible effect, he offered a toast to "water" — to a class which by this time had assimilated very little of the meticulously prepared and studiously memorized lecture.

During World War II, Dr. Allan Butler provided Dr. Gamble with the opportunity to study the state of fasting, this time in voluntary adult subjects at Woods Hole — conscientious objectors — and to observe the effects of water deprivation. "As regards the merit of the carbohydrate emergency ration which our work produced," Dr. Gamble wrote, "I will cite the testimony from a British seaplane pilot. He told me that he was always delighted to pick up American flyers from their little rubber rafts because he knew they would have aboard a can of jolly good candy."

*Joe V. Meigs, '19*

*Herbert C. Moffitt, Jr., '41*



*Howard B. Sprague, '22*

# NEW MEMBERS OF THE ALUMNI COUNCIL

## 1958 – 1961

Dr. Gamble worked quietly and refused to let anything divert him from his chosen direction. Only gradually did the medical world begin to realize that James Gamble knew more than anyone else about water and salt balance in children. Recognition has been late — and abundant. In the last 8 years, he has received the John Howland Medal of the American Pediatric Society, the Moxon Medal of the Royal College of Physicians, and the Kober Medal of the Association of American Physicians; he has been awarded honorary degrees by Chicago, Yale and Washington Universities in this country and the University of Zurich in Switzerland, and has delivered the Thayer Lectures at Johns Hopkins, the Lane Lectures at Stanford and the Terry Lecture at Washington University; his scientific work has been recognized in his election, as one of a small group of physicians, to the National Academy of Sciences.

The name of J. Gamble has even become common coin in the exotic East. Dr. Edward Neuhauser recently did a double-take when he noticed on the door of a laboratory at the new Children's Hospital in Ankara, Turkey, this sign:

J. Gamble
Bíyokímya Arastirma
Laboratuari

("J. Gamble, Biochemical Research Laboratory")

He was told that Dr. Gamble did not know that the laboratory had been named for him, that the christener had never met Gamble either, but that he had been so impressed by his work that he thought it a fine idea to name a biochemical research laboratory after J. Gamble.

At Sorrento, Maine, across the blue waters of Bar Harbor, Dr. Gamble was able to indulge his hobbies of sailing and golf — and also a little-known talent for the theatre. The dramatic adaptations of *Cinderella* and *Jack-the-Giant-Killer,* which he wrote for his children, were produced and acted by five young Gambles and made into movies by Dr. Gamble. The most recent of these was a three-reeler entitled *Peterborough Pearls.*

Among the professions in which the quest for knowledge is most surely an enthusiasm sparked by the personal contact of colleagues and teachers, medicine must rank very high. We know of the abundant and thoughtful philanthropy that came from America's industrial fortunes and of their indispensable help to research facilities in the beginning 1900's. Dr. Gamble has given of himself in an even more intimate and vital way. He has devoted his own life to investigation and to teaching. While it is rumored from many sources that he gave of himself, not only personally as a teacher, but financially, to help young investigators, the kindliness and extreme modesty that have always characterized James Gamble are inseparable from his generosity.

He himself has always emphasized the role of good friends and of luck as factors of his own success, and he is fond of saying that "Dame Fortune is a fickle gipsey . . . always blind and sometimes tipsey," adding, "Perhaps you will say that is why we have been so companionable." Louis Pasteur would have added still another thought to this, for it was he who remarked that "Chance favors the well-prepared."

Dr. Alan Ross in speaking of Dr. Gamble recently said that, "if, in the surge of new construction, the laboratory study at the Children's Medical Center is moved to another site, I hope that Dr. Gamble's cubbyhole study will also be preserved. Surely, there can't be many rooms from which such clarity of thought and expression have emerged."

# Editorial

## ". . . NOR YET THE LAST TO LAY THE OLD ASIDE"

In the struggle for knowledge and understanding no one would deny our debt to the generations of thought that have preceded us. This knowledge-gathering process has been likened to the genesis and development of a coral reef from its simple beginnings on the ocean floor to its final rise above the ocean's surface, each layer depending for its support upon the layers beneath.

As we contemplate our changing curricula, there is always a confusion of beliefs as to what part the past should play in developing a student's knowledge and his ability to do productive thinking; and to what extent the unguided wanderings of a student's mind should be allowed to govern his course. Where should the emphasis be placed? On the one hand, there is the classical approach, dependent upon certain set teaching methods and a more-or-less established body of knowledge; on the other is the "progressive" method that leaves the student to himself and boasts a more "imaginative" intellectual development.

Elsewhere in this issue of the *Harvard Medical Alumni Bulletin,* Dr. Williams has delightfully "pointed" out the fallacy of an unyielding philosophy about anything; and Dr. Reavis has warned us against smothering individualism. Both of these bits have a pertinent bearing on this discussion.

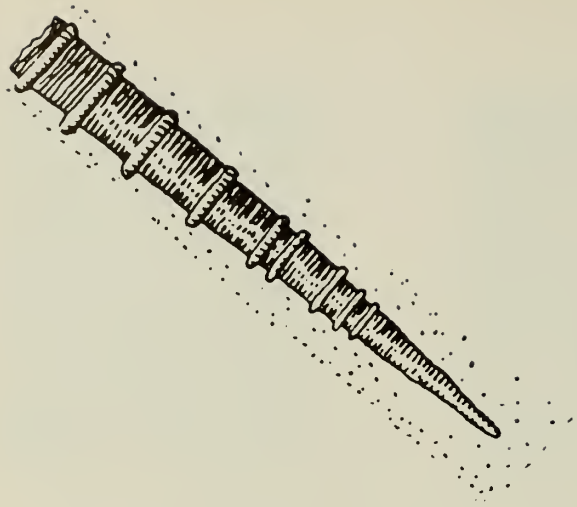
The answer is somewhere in between. Those who accept the past without reservation may not have the imagination to add new knowledge to the coral reef. Those who refuse to accept the past may with luck fall upon new ideas, but more often, flailing blindly about, will sink into oblivion unsupported by any understanding of pre-existing knowledge. Alexander Pope wrote:

> "Be not the first by whom the new are tried,
> nor yet the last to lay the old aside."

In a very real sense for the medical student, the teacher *is* his best contact with the past. In no postgraduate study does the teacher play a more important role than in medicine. He serves as liaison between the student and those accumulated layers of knowledge. Without him, the student may have his books, but he loses his strongest steadying contact with the most important past, the immediate past. More than that, the teacher, if so endowed, can spark the student's individual imagination to new independent thoughts and fruitful ideas.

Harvard's philosophy of education has ultimately managed to maintain a happy balance between its devotion to the past and its dedication to the future, through the caliber of its teachers. Harvard has ever been conscious of the error of compulsive change for change's sake but has never held back from accepting new ideas of education that appeared potentially fruitful. And through the changing years an intimacy of *continuous* intellectual contact between student and teacher has been maintained which is the backbone of her success in education. May this contact not be weakened as our educational program by necessity becomes more complicated.

J.R.B.



# The Point

THERE is no sound or particular reason why a legend need be of great antiquity or of verifiable accuracy.

Some hundreds of millions of years ago, in Silurian times, there flourished a lovely species known as Tentaculites gyracanthus. This shallow sea shell animal created some of the limestone that makes the cement for our present-day roads. Its fossil remains are really beautiful in design.

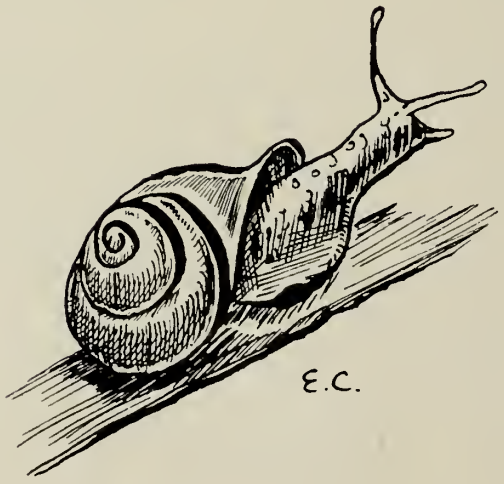
This animal by shape had a sharp, straight point. Let us say, therefore, that the species was sharp, straight, stubborn and irritating. It never gave an inch in an argument. The result was that its sharp point was often broken off, exposing its soft inner part, so its survival value was poor. The species is now extinct.

Its cousins gave a little, curving their points a bit, giving here and there by instinct or for good reason; some more so than others. They protected their sharp points and these species survived better. The most successful were the snails, which tucked in their points carefully, close to their centers. One of the most attractive of their descendants is the Chambered Nautilus, so beautifully told of in the uplifting poem by Dr. Oliver Wendell Holmes.

Snails there were in Silurian times. Snails there are today. Snails may well be here some hundreds of millions of years from now. Their survival value is great. Can you find no lesson in this?

HUNTINGTON WILLIAMS, M.D.


*The Chambered Nautilus: Oliver Wendell Holmes' bookplate.*



# The Animal School

*(A fable of the administration of the school Curriculum with special reference to individual differences.)*

NCE upon a time the animals decided they must do something heroic to meet the problems of the "new world," so they organized a school. They adopted an activity curriculum consisting of running, climbing, swimming, and flying; and to make it easier to administer, all the animals took all the subjects.

The duck was excellent in swimming, better in fact than his instructor, and made passing grades in flying, but he was very poor in running. Since he was slow in running, he had to stay after school and also drop swimming to practice running. This was kept up until his web feet were badly worn and he was only average in swimming. But average was acceptable in school so nobody worried about that except the duck.

The rabbit started at the top of the class in running, but had a nervous breakdown because of so much make-up work in swimming.

The squirrel was excellent in climbing until he developed frustration in the flying class where his teacher made him start from the ground up instead of from the tree-top down. He also developed "charlie horses" from overexertion and got a C in climbing and a D in running.

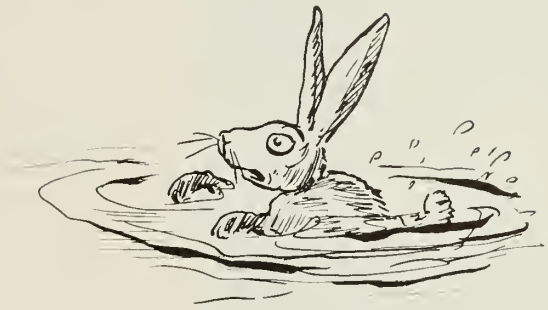
The eagle was a problem child and was disciplined severely. In the climbing class he beat all the others to the top of the tree but insisted on using his own way to get there.

At the end of the year, an abnormal eel that could swim exceedingly well and also run, climb and fly a little, had the highest average and was valedictorian.

The prairie dog stayed out of school and fought the tax levy because the administration would not add digging and burrowing to the curriculum. They apprenticed their child to a badger, and later joined the groundhogs and gophers to start a successful private school.

Does this fable have a moral?

DR. G. H. REAVIS




# Heal the Sick!

*The Reverend Nathaniel Treat Whitcomb*

PROTESTANT CHAPLAIN TO THE PETER BENT BRIGHAM HOSPITAL AND EPISCOPAL CHAPLAIN AT THE HARVARD MEDICAL SCHOOL

At the conclusion of the Gay Lecture for 1956, Dean Douglas Horton, of the Harvard Divinity School, expressed this conviction and hope: "I believe that we of the Medical and Divinity Schools of the University might see more of each other to our mutual advantage. I shall be greatly surprised if an interdisciplinary course (it might be called the Theology of Medicine) is not called for one of these days. As a matter of fact, in the Divinity School we are hoping next year or the year after to set up courses in religion and health. These would be presided over by a theologian having a knowledge of depth psychology and a psychiatrist with religious intuitions. Perhaps eventually a similar happy combination could be effected in the realm of religion and straight medicine."

Dean Horton's reason for expressing that hope, which has at least in part already been realized, is clear enough: "At the moment I am interested only in establishing the fact that a doctor with a religious experience may not only be as well equipped technically for his task as one who is completely secularized, but that he has certain attributes, of which he may or may not be conscious, which make him a better doctor. There is something to be said for the attitude of the author of *Religio Medici:* 'I cannot goe to cure the body of my Patient, but I forget my profession, and call unto God for his soule'."

In recent years the theme of religion and medicine has become of increasing importance to many a physician and not a few theologians. Yet this new interest has been to a great degree academic, with little possibility of working out in practice the relationship of the doctor and the pastor to the patient and to one another.

The hope expressed by Dean Horton in 1956 is becoming a significant part of the Divinity curriculum. On the other side of the Charles, the problem of determining just what the relationship between medicine and theology is, will be debated. From our side of the River will come variations on that theme. Doctors, medical students and clergy will discuss their experiences in attempting to minister to the many needs of the patient: his physical and spiritual needs as well as his more manifest physical ones.

During the past year something of a pioneer experiment in the Harvard Medical Center has been initiated. Months of discussion among doctors and clergy preceded my being asked by the Bishop of Massachusetts to accept this ministry and its challenge. Among Jews and Christians especially, ministry to the sick is not new — it is as old as organized religion itself, yet ministry to medical students is somewhat unusual, if not unique. Certainly it is new at Harvard! I began my work with no official relationship to the University. This

arrangement persists, yet the co-operation and interest shown by so many people at the Center are striking evidence of the widespread concern over religion and medicine. No formal program of activities has been established; rather the emphasis has been on meeting individual students. What follows is the fruit of those meetings. From hours spent at meals, on wards, in laboratories and in that great institution of learning, the "bull session," have come these non-academic concerns of many students.

A great deal has been said about the art of medicine; as much has been said about the art of the cure of souls. Because of this art, each profession has, in a sense, a personality about it. This was expressed quite well by Dr. David Allman: "The personality of medicine involves you the physician and you the patient as individual human beings interested in the scientific advances and complexities of modern medicine. It is only natural for the person who is ill to expect sympathy and compassion along with all that modern science can offer. In medicine today, we physicians realize this and we are giving renewed emphasis to the fact that it is our responsibility to minister not only to the human body and its ills — but also to human hearts, minds and emotions."

This is a significant statement. It challenges all those who care for the sick to be aware of the needs of the entire person. Certainly this concept includes nursing care and social work, too — both of which contribute so much to the care and rehabilitation of the sick. Regardless of our particular responsibility, none of us can adequately meet the needs of the patient, unless we ourselves are whole persons. This wholeness is, essentially, integration of mind, body and spirit. In fact, this is the meaning of the word, "salvation" in the New Testament. How many of us have really struggled to achieve it?

It should be obvious to all of us, that in our relationships with other people, that what eventually counts for most is the sort of person each of us is, not what we say or do. To meet a person where he is in life, whatever his sort or condition, and to give him strength of mind and heart to fight through sickness; to give him vision of a better life — this quality of acceptance in the physician — and the pastor — is indeed the richest of gifts and the most eloquent of the arts. Tournier said, "The whole of art, however personal it seems or tries to seem, is essentially communion, a bond between persons, a supra-personal and inter-personal reality." In practice this means, simply, that the physician, the pastor, each in his way — with the training necessary for technical competence — can meet the patient at the point of his need, and understand him without judging him. This kind of art, this life-giving concern cannot be defined, it cannot be taught or learned; it can only be pointed to, for it emerges from within the person who is prepared to help another. It is there because of what that person is and what he believes. No one has put this more succinctly than Dr. Francis Peabody: "the secret of the care of the patient is in caring for the patient."

In meeting people in what for them is the crisis of a hospital situation my orientation as a priest to the whole field of religion and medicine is necessarily and primarily pastoral. The great medico-moral issues of euthanasia, contraception, artificial insemination, lobotomy, human experimentation and the host of other problems, old and new, present timely topics for discussion. The minister and the doctor can help one another with the dilemmas in order to make mature judgments as these problems apply to individual patients. Further, it is the pastor who, perhaps more than any other member of the medical team, is privileged to share with the patient his feelings, his fears and his hopes. God's representative can talk about life with the patient at a time when it is most precious — when it is threatened. This is not a defeatist attitude. Nor does it give false hope. Rather the patient can be shown how to trust the Author of Life in such a way that no matter what happens in crisis, the ultimate outcome will be acceptable. It is the physician's solemn obligation to relieve suffering and prolong life. It is a major part of the pastor's work to help individuals understand that it is not the length of one's life that matters, but rather how one accepts one's life. There may seem to be a conflict between the two tasks; yet the physician should be willing to ask himself what kind of life remains for the patient he has saved. It is here, at the point of rehabilitation and preventive measures, that the pastor and doctor can work hand in hand.

Those of us who are with the sick constantly in hospitals, as chaplains or as members of the house staff, are frequently touched by the death of a patient. It is because that particular individual has touched us by his life that we are moved by his death. Many of us at the Brigham will never forget a young Harvard graduate student who died after a long siege with Hodgkin's Disease. His sensitivity to many things and people, his understanding, and finally his acceptance of his own death were the unforgettable characteristics of a mature person. With many patients, the relationship which doctors and clergy share with them is not one-sided; it is not we who are always giving, for we are given much in return.

One problem which medical students frequently raise is what appears to them to be antagonism on the part of theologians toward the Scientific Method. Unfortunately there is still a lurking prejudice, or what amounts to a superstitious fear among less orthodox or unsophisticated religious groups of the ends and means of medical research and practice. Yet, this is a problem

which must be solved in theological, and not medical, faculties. Judaism and Christianity are religions based on Revelation. The implication and conviction is that God reveals himself generally through nature and especially through Man. It is axiomatic within these religions that all knowledge is revelation from God. The only argument the theologian might have with the scientist is that the latter lets the scientific method itself become his god. The theologian would rightly insist that the method should point beyond — to God. The Scientific Method is not antagonistic to mature religious thought and experience. It should serve rather to reinforce one's understanding of Life, giving him an even deeper realization that Life is a whole, not to be compartmentalized or fragmented by one's own interest in a particular field.

In the relationship between religion and medicine there is another question which looms large, especially in this day when we seem to have lost our understanding of the meaning of community and the individual's place in a community. Great urban areas, such as New York and Boston, are magnificent examples of man's achievement, but they also evoke the realization that the community does not always serve the individual. In the cities a person either sinks or swims. The asphalt jungle is a terribly real experience for thousands of people — and it is not confined to depressed areas. The pastor and physician today see hundreds of people who have lost or are in danger of losing out in their struggle for survival. All of this raises the question, "How does one educate for professional responsibility?" The issue of what constitutes education is the concern of faculties everywhere, but professional responsibility is the concern of far more people. Clearly, those of us who have been trained in a profession — law, medicine, theology — have a responsibility to the community limited only by our capacity and our vision. In a sense the physician and the pastor are entrusted with the lives of individual men, women and children. We are stewards. We are charged with the care of people who cannot care for themselves. This has far-reaching implications, for it is not enough that a pastor define God and what God has done, but rather that he demonstrate through his own ministry what God does. It is not enough that the doctor rid his patient of symptoms, but that he also help the patient adjust to Life.

In my work with medical students it would be presumptuous to try to proselytize. The first question which many students ask me is, "What are you doing here?" Much of what has been said above has come from answering that question. My ministry is in large measure an attempt to analyze with the medical student what it means to be entrusted with another person's life. If he, as a physician, is to help the patient completely he must himself understand Life in all its dimensions and have made some lasting decisions about the nature of man and God. The philosopher asks, "What is man?"; the physician, "What is man — how is he made and why?"; The Psalmist poses the question for the theologian: "What is man that thou art mindful of him?" Medicine and the ministry, unlike other vocations, are concerned with persons and their relationship to all of Life. In caring for the patient, in the sense in which Dr. Peabody used that word, it is our hope that — as Shakespeare once prayed for himself — God will make those whom we serve as pastor or physician, not only better "of" their sickness, but better "for" it.

Obviously, medical specialization has become a necessity. Yet because individual persons must be the ultimate concern of even the medical specialist, we are bound more than ever — in the light of present needs and circumstances — to re-examine and stress anew those "certain attributes" to which Dean Horton pointed — those concerns which make the doctor who has some religious experience a better doctor than the physician who has refused to consider these things. The behavioral sciences will play an increasingly important role in our mutual concern for the whole person, both in sickness and in health.

For many reasons specialization has become necessary in a number of areas. The church has faced this need too. It is essentially a problem of communication: while the truth embodied in what the Judeo-Christian tradition teaches about God and man is just as relevant, the vehicles of communication — for example the traditions of the church — have failed to hold the minds and allegiance of far too many concerned people. The parish church, particularly in urban areas, is no longer the center of the community's life; it has in many instances been threatened by television, the automobile and a variety of readily accessible diversions, in addition to the demands made on the individual through his daily work. In such a community as Boston, with its great concern for education in general, and medicine in particular, the church has seen the need to minister to communities of interest and occupation as well as to the smaller communities which constitute what most of us would associate with the word "church." The challenge is clear: the church increasingly, through specialized ministries, such as we are engaged in at the Medical Center, will meet her people where they are — where they spend most of their time.

Each of us — pastor, physician, surgeon, psychiatrist — has the same goal before him: the health of the individual. Necessarily we use different means, though the end is the same. In each case the success of our ministry will depend on our ability to communicate — what we know, what we believe and what we are — both to the patient and to one another — person to person.

# The "Crowbar Skull" and Mementoes of "Phrenological Hours"

*Paul I. Yakovlev, M.D.*

Curator, Warren Museum

This year when the one hundred-seventy-fifth anniversary of the foundation of the Medical Department of Harvard University is commemorated, it should be appropriate to lay before the alumni and students some of the objects which have been reverently preserved at the Warren Anatomical Museum from a long and rich past. Most of these objects on exhibit at the Museum may not appear to a casual onlooker to be of a particular interest and some may even seem unattractive. This is true, however, only if these objects are considered in themselves, as objects detached from the larger context of their meaning as historical documents. When considered in this larger context, they begin to shine with the reflected light of the past and illuminate the aspects of the present not discernible in any other light.

Those of the objects, particularly, which date from the first half of the nineteenth century reveal how much closer the thought and intellectual values of the early American men of science and medicine were to those of their contemporaries in the Old World, even though the scale of physical separation of the two worlds across the Atlantic was incomparably greater than it is in our time. They are for a thoughtful onlooker the visible samples of the past to measure the growth of the American branch of Western Civilization in the course of this century and a half, a growth in a sense out and away from the common stem of that civilization from which the other branches have grown, as they must, in a different direction. And so, these samples of the past have a value and a meaning of more than the local or sectional interest of mere objects stored away in a family's attic. Many of them are documents of National interest and play their small, yet not a negligible, part among other records of the historical role of this medical school in the Nation.

It is in this context that some of these objects will be discussed in the present article.

1. *Dr. John M. Harlow, Phineas Gage, and the "Crowbar Skull" (1848-1868).*

Among hundreds of objects conserved in the Museum, there are few which have attracted more visitors and spread farther the fame of the Museum in this country and even abroad than the skull and "tamping iron" (Fig. 1) of Phineas Gage of Lebanon, New Hampshire, the foreman of the rock-blasting gang, who was injured while working in the fall of 1848 on a railroad construction in the town of Cavendish, Vermont. The story of the accident in which Phineas Gage suffered a severe head injury and survived was recorded by John M. Harlow, a twenty-nine-year-old country doctor, 4 years out of medical school, who practised in the town. The story is well known to most of the Harvard Medical alumni. In brief, an inadvertent explosion of the powder charge in the rock which Phineas Gage was tamping with the blunt end of his three-and-a-half-foot-long iron bar literally shot the bar through his head, the pointed end of the bar entering under the arch of the left maxilla and emerging through the top of the frontal bone near the coronal suture, blowing out apparently a considerable amount of cerebral substance with it through the hole. "The injured man was thrown upon his back by the explosion and gave a few convulsive motions of the extremities but spoke in a few minutes." His anguished teammates drove him, sitting upright in a cart some quarter of a mile into the town. Dr. John M. Harlow, town doctor, being absent at the moment, he was received by Dr. Edward H. Williams in whose hands the injured man commended himself saying, "Doctor, here is enough business for you." When about one hour later Dr. Harlow arrived, the patient walked upstairs

into the office "with little or no assistance and lay down on the bed" to be examined. Dr. Harlow diligently attended Phineas Gage through a severe purulent infection of the penetrating head injury which did not fail to develop and nearly killed his patient. He recovered in two months sufficiently to be taken to his home in Lebanon, thirty miles away, and in April of 1849, seven months after the accident, "he returned to Cavendish bringing his 'iron' with him." Such were the main facts of the accident as they were given by Dr. Harlow in what is truly a classic of medical observation and recording.

In December 1848, Dr. Harlow reported the case of "passage of iron rod through the head" in a letter to J. B. C. Smith, Editor of the *Boston Medical and Surgical Journal*. This letter immediately aroused a wide and, at first, incredulous wonderment. Henry J. Bigelow, who just then ascended to the chair of surgery at Harvard, a majestic and authoritative figure on the medical scene of those times, investigated the case personally and thoroughly. "The leading feature of this case," he wrote in his report, "is its improbability. A physician who holds in his hand a crowbar, three feet and a half long, and more than thirteen pounds in weight, will not readily believe that it has been driven with a crash through the brain of a man who is still able to walk off, talking with composure and equanimity of the hole in his head. This is the sort of accident that happens in the pantomime at the theatre, but not elsewhere." In January 1849 Bigelow at his own expense had Phineas Gage admitted for observation and study to the Massachusetts General Hospital. This may have been one of the earliest instances in which a patient was received in a hospital primarily in the interest of the medical research, and the cost defrayed from the investigator's funds.

*Fig. 3. Henry J. Bigelow, Professor of Surgery, 1849-82.*

Dr. Bigelow obtained the crowbar, which was deposited with the plaster cast of the head of Gage in the Museum of the Massachusetts Medical College, later incorporated into the Warren Anatomical Museum. The skull of Phineas Gage, who died (in San Francisco in 1861), 13 years after the accident at the age of thirty-nine, was recovered by Dr. Harlow in 1866 and joined the crowbar in "the Museum."

One may ask why this episode in the history of country practice of medicine and the exhibit which commemorates it have become invested with such a high appeal for the "believe-it-or-not" variety of intellectual curiosity. As a case of accidental head injury, its interest would seem to be, after all, merely casuistic. The answer is that for contemporaries, it was the survival "after the passage of the iron bar through the head" that was the cause of wonderment. This wonderment persisted unabated for almost a century, until the advent in the late 1930's of frontal leucotomy when, under the modern impeccable aseptic conditions, the passage of metal rods through the head proved to be a *quo ad vitam* innocuous operation.

The genuine meaning and interest of the casuistic episode in the medical practice of the past and of the exhibit lies in the context of the reports, observations and comments of Dr. Harlow and his contemporaries which have reached us. These reports illuminate the high level of informed objectivity with which this case from country practice was observed, the intellectual curiosity which it aroused in the observer and his contemporaries, and the stately elegance of a clear and concise English in which the observations were communicated to medical profession from "an obscure country town by an obscure country physician" as Dr. Harlow introduced himself in a letter to the editor of the *Boston Medical Journal*.

After describing the circumstances of the accident which occurred September 13, 1848 at 4:30 p.m., Dr. Harlow continued:

*Fig. 2. Headcast of Phineas Gage prepared by Dr. Bigelow in 1849.*

Being absent, I did not arrive at the scene of the accident until near 6 o'clock, P.M. You will excuse me for remarking here, that the picture presented was, to one unaccustomed to military surgery, truly terrific; but the patient bore his sufferings with the most heroic firmness. He recognized me at once, and said he hoped he was not much hurt. He seemed to be perfectly conscious, but was getting exhausted from the hemorrhage, which was very profuse both externally and internally, the blood finding its way into the stomach, which rejected it as often as every 15 or 20 minutes. Pulse 60, and regular. His person, and the bed on which

*Fig. 4. Dr. John M. Harlow, physician who attended Phineas Gage.*

he was laid, were literally one gore of blood. Assisted by my friend, Dr. Williams, of Proctorsville, who was first called to the patient, we proceeded to dress the wounds. From their appearance, the fragments of bone being uplifted and the brain protruding, it was evident that the fracture was occasioned by some force acting from below upward. The scalp was shaven, the coagula removed, together with three small triangular pieces of the cranium, and in searching to ascertain if there were other foreign bodies there, I passed in the index finger its whole length, without the least resistance, in the direction of the wound in the cheek, which received the other finger in like manner. . . .

I have been asked why I did not pass a probe through the entire extent of the wound at the time. I think no surgeon of discretion would have upheld me in the trial of such a foolhardy experiment, in the risk of disturbing lacerated vessels, from which the hemorrhage was near being staunched, and thereby rupturing the attenuated thread, by which the sufferer still held to life. You will excuse me for being thus particular, inasmuch as I am aware that the nature of the injury has been seriously questioned by many medical men for whom I entertain a very high respect.

Then follow clinical course notes which are delightful to read because in these straightforward telegraphic notes there is not a single cliché phrase, not a single shibboleth notion to clutter the reader's mind and distract attention. One sees in them only the observed. These running notes are clinically as meaningful to us now as they were meant to be for the writer and his contemporaries.

Twenty years later, in June of 1868, (having recovered in 1866 at considerable cost the skull of Phineas Gage), Dr. Harlow read a paper before the Massachusetts Medical Society and demonstrated the skull. In this paper, he made some foresighted remarks on the effect of the head injury on the mind and behavior of his patient during the twelve and a half years of his life after the injury.

And so, the skull and the "iron" of Phineas Gage, and the accounts of the episode which they commemorate illuminate the socio-cultural texture of rural New England in the first half of the nineteenth century. In this light we may discern the texture of the social fabric of a small-town democratic community, and may see that this fabric was interwoven with a solid thread of intellectual aristocrats such as Dr. John M. Harlow, an "obscure country physician" in "an obscure country town."

2. *Dr. Gall, Dr. Spurzheim and the Collection of the Boston Phrenological Society (1832-1911).*

The intellectual climate in which the "crowbar skull" has become so memorable a piece in the Museum becomes felt with the vividness of a reality lived when one examines the phrenological collection of head casts inherited by the Warren Anatomical Museum from the Boston Phrenological Society (1832-1842). This collection is unique. In number of exponents, it is probably second only to the comparable collection of F. J. Gall preserved at the *Musée de l'Homme* in Paris.

The collection must have contained originally many hundreds of casts prepared by the students and practitioners of phrenology. Such casts were the operational media of the phrenological research and practice. To have had "one's head examined," a phrase which since then has become a vernacular expression used in a different context, was in the thirties and forties of the past century a mark of a progressive world outlook and of a certain cultural sophistication. Thus the plaster likenesses of many illustrious personalities in the arts, literature, business and statesmanship, in Europe and in this country, have come to be prepared during the "phrenological hours," as one might say today. When, toward the end of the century, the phrenological movement came to the end of its natural cycle, many of these casts were lost through lack of interest and neglect. Those which were preserved represent valuable documents for the biographer of eminent personalities of the period.

Three casts of Samuel Taylor Coleridge (1772-1834) are remarkable in that they represent the great romantic poet and philosopher at three stages of his troubled and painful life. The cast on the left in Fig. 5 was made in 1810 when the poet was thirty-eight years old, about the period of "The Ancient Mariner," "Kubla Khan" and "The

*Fig. 1. The "Crowbar Skull" of Phineas Gage*

Pains of Sleep"; that in the middle was made in 1827 when he was fifty-four years old. According to the catalogue, the cast on the right was taken in "July 1834," the year and month of the poet's death (July 25) and so presumably is a copy of the death mask. One of the casts carries the phrenological "personality evaluation" inscribed in pencil on the base: "Poetry — ideality."

Next to Coleridge, there is a mask of William Wordsworth (1770-1850), the friend of Coleridge on whom the latter depended so much in the years of his anguished flounderings. This is a death mask (presumably a copy).

The cast of Jakob Ludwig Felix Mendelssohn-Bartholdy (1809-1847), the composer of romantic symphonies and overtures whose concerts, it is said, never failed to cause a great queen of the period to shed tears of langorous emotion, was made in 1829 when the composer was twenty years old and already famous. The cast is most probably original, made by Spurzheim when he was a much sought lecturer and practitioner in London.

The death mask of Philippe Pinel (1745-1826): there are two such masks at the Warren Anatomical Museum. Both are copies of the original, which is in the *Musée de l'Homme* in Paris and were brought here by Spurzheim.

Some three score of such casts of general historical interest are found in the collection — Laurence Stern, Whewell, William Goodwin, St. Jullien (Napoleon's secretary), St. Simon (the French forerunner of Karl Marx), Jeremiah Day (President of Yale), MacAdam, F. J. V. Broussais, Edmund Kean (Shakespearean actor), Richard B. Sheridan and a score of lesser figures of an episodic yet considerable interest to the historian of the period. A much larger assortment of casts of heads of criminals, insane and other odd characters, many of whom made what must have been "exciting" newspaper items in their time, are arranged under phrenological designations of their "propensities" (tendencies we might say today) such as "amativeness," "assaultiveness," "possessiveness," "philoprogenitiveness" and so forth.

Recently an illuminating study of the phrenological movement by John D. Davis entitled, "Phrenology: Fad and Science; a Nineteenth Century American Crusade," appeared. This scholarly work of a penetrating historical insight, throwing so much light upon certain aspects of our own time, should be read by those who may wish to visit and see the phrenological collection at the Warren Anatomical Museum. The sources of the phrenological movement which swept Europe and America with a force well described in the word "crusade" can be traced far back into the eighteenth century. The space does not permit to enter into the details of the origin and formation of Gall's and Spurzheim's ideas. At the end of the eighteenth century, in the to-and-fro movement of ideas and of arguments dating from the Middle Ages on the "seat of the soul" in the human frame, the pendulum was beginning to move from the primacy of claim for such a "seat" in the fluid parts of the body to that of the solid — from the heart and blood to the head and brain. The story of the "sect of neuropathologists" as told by Walter Riese gives an interesting account of the trends of ideas on man and his nature in that period. "Once the solidum had entered the scene and anatomy came to the fore, the nervous system necessarily had its share in the new doctrine of the disease." The intellectual climate was favorable to the ideas of Gall.

Franz Joseph Gall was born in 1758, received his medical education and successfully practiced for some years in Vienna, was forced to leave

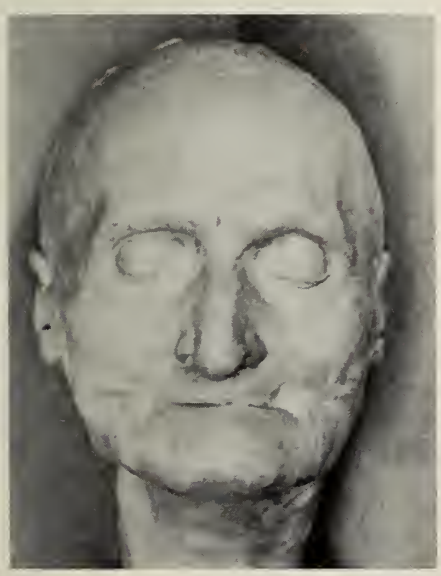
*Fig. 6. William Wordsworth, presumably a death mask.*

*Fig. 5. Samuel Taylor Coleridge. Three casts from left to right at the ages of thirty-eight, fifty-four and the death mask at sixty-two.*

because of the displeasure of the government which he incurred, traveled in Europe and in 1807 settled in Paris where he lived for twenty-one years. It is in Paris that he consummated the results of his research and theories in a lucrative practice and gained great influence over the minds of his contemporaries. Broussais and Corvisart sponsored his views. Cuvier was sceptical. To Gall's pique, Pinel never asked him to see his patients. Gall died in Paris in 1828.

He published his only major work much later. It was issued in four in-quarto volumes with a hundred-plate atlas, in the years from 1810 to 1819 in Paris, in collaboration with Spurzheim. The title (as translated from the French) was "Anatomy and Physiology of the Nervous System in General and of the Brain in Particular, with Observations on the Possibility to Recognize Several Intellectual and Moral Dispositions in Man and in Animals from the

*Fig. 8. Philippe Pinel, French psychiatrist, death mask.*



Configuration of their Heads." He was a competent neuroanatomist, in many respects far ahead of his time, and may be regarded as one of the founders of comparative anatomy of the brain. To him belongs the credit for a basic empirical generalization that "form follows function," a generalization which, even to this day, remains the cornerstone of comparative anatomy. Upon this generalization he built a theory which may be summed up in four propositions (Ackernecht and Vallois): 1. The moral and intellectual qualities of man are innate. 2. Their functioning rests upon organic material basis. 3. The brain is the organ of all the faculties, of all propensities and of all the feelings — it is the "organ of the soul." 4. This organ consists of as many organs as there are faculties, propensities and feelings.

Gall was not the founder of phrenology and, in fact, never used the word. He called his method "cranioscopy." It was Jean Gaspar Christoph Spurzheim (1776-1832), a devoted pupil of Gall from his Vienna days, who implemented Gall's theory with the melioristic message and operational framework of phrenology. He followed Gall to Paris and later, parting with his master, went to London and in 1832 came to America.

If Gall was the Allah, then Spurzheim was his prophet. After parting with Gall, he spent some ten years in England and aroused a considerable interest in Gall's theories, which he eloquently expounded. His fame reached across the Atlantic. On August 4, 1832, he came to New York, being invited by a group of his many admirers here and on August 20 he came to Boston. He gave lectures which immediately created great excitement and controversy, which is essential for the propagation of any new system of thought. The fortuitous circumstance of his death within a few weeks, on November 10, 1832, apparently from typhoid fever, might have added to the emotional appeal of the message he brought to America. He was buried at public expense in Mount Auburn Cemetery. The Boston Phrenological Society was established on the day of his funeral. Such societies had been set up earlier in many American centers of intellectual

*Fig. 7. Felix Mendelssohn-Bartholdy, composer, at the age of twenty.*

life. "As Tocqueville observed, America has used the 'principle of association' more successfully than any other country in the world; members of the intelligentsia now banded together in phrenological societies for the study and propagation of the subject in this institutionally minded age . . . Regular meetings were held, at which the members presented papers on the principles of their science and its multifarious applications to human affairs" (Davies). The foundation of the Boston Society on November 10, 1832 may be regarded as the date of the formal launching of the phrenological movement on this side of the Atlantic.

As is shown by Davies in his scholarly book referred to above, the movement had profound influence on almost every major field of public affairs and on the attitudes and mode of thinking of the American society. Thus, great changes in the ideas on the methods of education, on the philosophy and practice of the care of the mentally ill, on the administration of criminal law and penal institutions have followed hand-in-hand with the propagation and acceptance of the new

ideas inspired by phrenology. The American society, which has been traditionally and strongly influenced by the philosophy of Puritan scepticism in regard to the modifiability of human nature and by the Calvinistic doctrine of predestination, yet intensely melioristic in its aspirations and philosophy of life has found in the premise of phrenologic doctrine a promise and a proof that human nature is modifiable. The series of casts in the Museum were originally prepared to demonstrate changes in the configurations of the head and dimensions of various organs which have taken place under the influence and exercise of "good" faculties and the restraint of "bad" ones. Many of such "longitudinal" studies of the cranial expression of the changes of "personality" are mentioned in the catalogue of the collection. The three casts of Coleridge, taken at different ages, were apparently also intended to show the relationship between the quality and content of the life experience of the great romantic, and the changes in the shape and appearance of his head.

Phrenology definitely carried a message of promise and so was received and accepted uncritically and with a widespread enthusiasm. So it is with all new systems of thought. They live and grow in the measure the message they carry fulfills a need of the times.

Not all succumbed to the blandishments of the new science. There is an illuminating phrase in the diary of John Collins Warren, which reveals the level-headed reserve of one of the remarkable personalities of this period: ". . . in all the phrenological courses which I attended, the principal object of phrenological lectures was, not to expose the ground and basis of phrenology, but to interweave it with popular and interesting topics. However judicious this might be, it was, of course, not calculated *to give me the information I desired*" (Italics mine — P.I.Y.).

In the same year, 1837, Thomas Sewall, Professor of Anatomy and Physiology, and a friend of Warren, delivered two lectures at the Columbian College in Washington, which he entitled "An Examination of Phrenology." Concluding his lectures, he appealed to his students in these words: "Never had any people higher destinies than ours to fulfill, or less excuse for pursuing shadows or indulging in airy speculations. . . ." and then spoke thus: "At one time, we find a Porta attempting to ascertain the character of men by discovering in them resemblances to certain animals of the lower order. At another period, the physiognomy of Lavater becomes the universal guide. Next, the facial angle of Camper is made the measure of the human intellect. These have all been put forth, under the most confident assurances of their truth, and the sanction of great names. Each has flourished for a time; has been tested by experience and observation, and been abandoned. Phrenology has taken their place. Whether this, also, is destined to the same end, remains to be seen."

In a retrospect of one hundred and twenty years, we are in a position to see the end of which Sewall spoke, in the Warren Anatomical Museum.

The phrenological movement reached its acme in the late 1850's, began to decline soon after the Civil War, but the societies lingered on much longer. The last issue of the *American Phrenological Journal* was published in 1911. And so that year may be regarded as the formal end of the cycle of this interesting intellectual movement in the history of ideas in America.

I trust that this sketchy outline of the historical background of the phrenological collection in the Museum gives at least a general idea of the rich and informative context of the collection and of the light reflected from the past upon the present.

To conclude this outline of the historical context of the collections of the Warren Anatomical Museum, I wish to express the hope that the Museum may become a memorial of medical history at Harvard. The value of the Museum for the Medical School in this role is certain to be the most lasting one. Time as a mere chronometric dimension is only an abstract conception. But time as a duration is an experience lived. The sense of history — that is, of the genetic continuum of the present with the past — is the measure of the maturity of a society as well as the hallmark of the maturity of an individual. The Museum incarnates and fosters that sense of the continuum of the present and future generations with those which preceded them.

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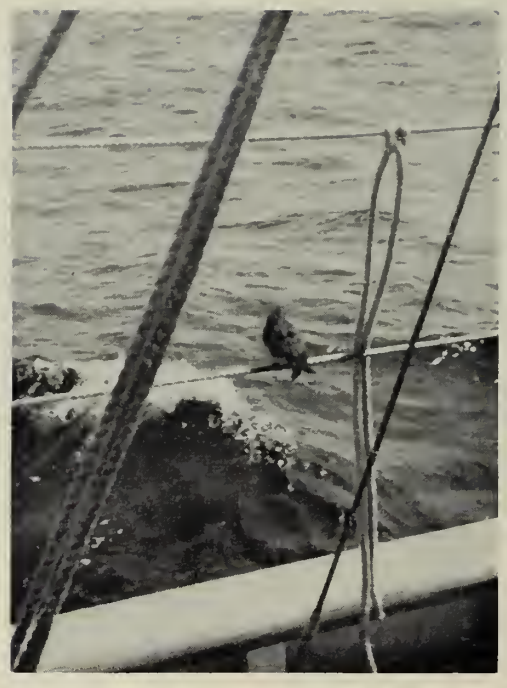
Paul H. Liljestrand, '37, made this photograph on board the *Te Vega* in the South Pacific, while serving as physician to the crew of Cinerama #5.

# DOCTORS AFLOAT

15-foot Swordfish, *Petrel*. John R. Richardson, '31, sails on Penobscot Bay, Me.

Aboard the Farallon Clipper, *Patita,* owned by Jesse L. Carr, '27; setting is San Francisco Bay with Golden Gate Bridge in background.



Migrant bird, resting; New Hampshire coast. Franc D. Ingraham, '25.

*Norman Fortier*

Start of the 1958 Bermuda Race: Forty-one foot Concordia Cutter, *Magic*, owned by Dr. George Nichols.

The *Coaster,* formerly of Marblehead, Massachusetts. Stephen W. Royce, Jr., '45, discovered her while taking final exams at M.I.T.S. and the following year shipped her to Newport Beach, California, where she has been ever since. Taken at the start of the 1958 Ensenada (Mexico) Race.

Forty-foot ketch, *Tatoosh,* owned by Alexander H. Bill, Jr., '39, of Seattle. Taken in Puget Sound off Port Ludlow, Washington; two of his six young "crew" have defected to the dinghy astern.

*Xray of duckbilled platypus (ornithorhynchus anatinus)*

# The World Through X-ray Eyes

*Merrill C. Sosman, M.D.*

Mrs. Sosman and I had always hoped to visit our colleagues and former students in faraway places but actual plans for such a trip were not laid until 1954 when we received an invitation from Australia to spend two months there in a postgraduate lecture tour. Accepting this invitation we gradually extended our travel plans to include the Far East, Middle East and Near East.

*Note:* This is the story of a six months' trip around the world which Dr. and Mrs. Sosman made in 1957, the year after Dr. Sosman became Professor of Radiology *Emeritus* at the Peter Bent Brigham Hospital and Harvard Medical School. The first third of the trip was sponsored by the Postgraduate Federation in Medicine of Australasia and the remaining two-thirds was sponsored by the State Department, Division of International Educational Exchange.

Our trip took six months. We left Boston in February, 1957 and headed for our first foreign country, Los Angeles. We spent a week in the Valley of the Smog visiting friends and taking part in a postgraduate course for radiologists sponsored by the Southern California group. We admired the department of radiology at U.C.L.A. because it so closely approximates the ideal balance desirable in any academic department of radiology: half of the department, the budget, the equipment and the professional staff is devoted to the clinical load from the hospital; the other half is devoted to research and teaching.

From Los Angeles we flew to Auckland, New Zealand, touching briefly Honolulu, Canton Island and the Fiji Islands. New Zealand is made up of two separate long islands, the North Island and the South Island. Auckland and Wellington are the chief cities on the North Island. The radiologists of both islands had been notified well in advance of our visit and they had planned their annual meetings to fit our schedule.

Before accepting the invitation to make this arduous trip with its lectures and clinics, I had bargained with the committee to allow me time for sight-seeing, visiting, resting and fishing. The first dividend was sandwiched in between meetings on the North Island. We motored to the center of the island to volcanic Lake Taupo, which is noted the world over for its magnificent rainbow trout. My guide was Dr. Frank Harvey who

came out from Ireland forty years ago to practice radiology in New Zealand, chiefly because he had read of the remarkable fishing in *Hardy's Medical Magazine.* In a day and a half of wet-fly fishing on the Tongariro River three of us landed fourteen good rainbow trout, as big as our grilse in the Canadian provinces or Newfoundland rivers.

We then flew across Cook's Strait to the very Scottish city of Dunedin for a meeting of the radiologists of the South Island quite similar to the Auckland meeting. Our hosts drove us across the South Island into the mountainous territory along the west coast where there were beautiful lakes and rivers and more rainbow trout fishing. There was considerable snow on the tops of the mountains and we heard of the Franz Josef glacier further south, said to be the largest single glacier in the world. New Zealand has climatic zones similar to our own, though inverse; tropical weather in the northern part, and constant snow and ice in the mountains of the southern tip.

Leaving New Zealand, we spent six weeks in Australia visiting the six major cities of Sydney, Melbourne, Hobart, Adelaide, Perth and Brisbane. All of them but Hobart have a medical school and active groups of radiologists. In each Australian city we were met by a representative of the postgraduate committee in medicine; also, by someone representing the radiological society and by representatives of Eastman Kodak, who were most helpful in making our trip pleasant and agreeable as well as helping with the technical problem of slide projections.

Sydney has many hospitals and we found excellent clinical and investigative work of all types in progress. At my request we were shown films of hydatid cyst disease, and I acquired a good collection of hydatid film copies.

At Hobart on the island of Tasmania, we found some unusually beautiful scenery and interesting local history. The most intriguing creature we saw was the duck-billed platypus, many of which still live in the streams and irrigation ditches of Tasmania. We saw several live specimens in the zoos and were allowed to photograph and handle this remarkable fur-bearing mammal which lays eggs. At my request Dr. Friend of Hobart obtained for me anteroposterior and lateral radiographs of an adult platypus.

At Adelaide, the capital of South Australia, we found a new four-MEV linear accelerator which had just been installed for use in the Adelaide General Hospital. It seemed to me, generally, that radiotherapy in Australia was on a higher plane and received more public and political support than did diagnostic radiology. The same seems to be true in Great Britain.

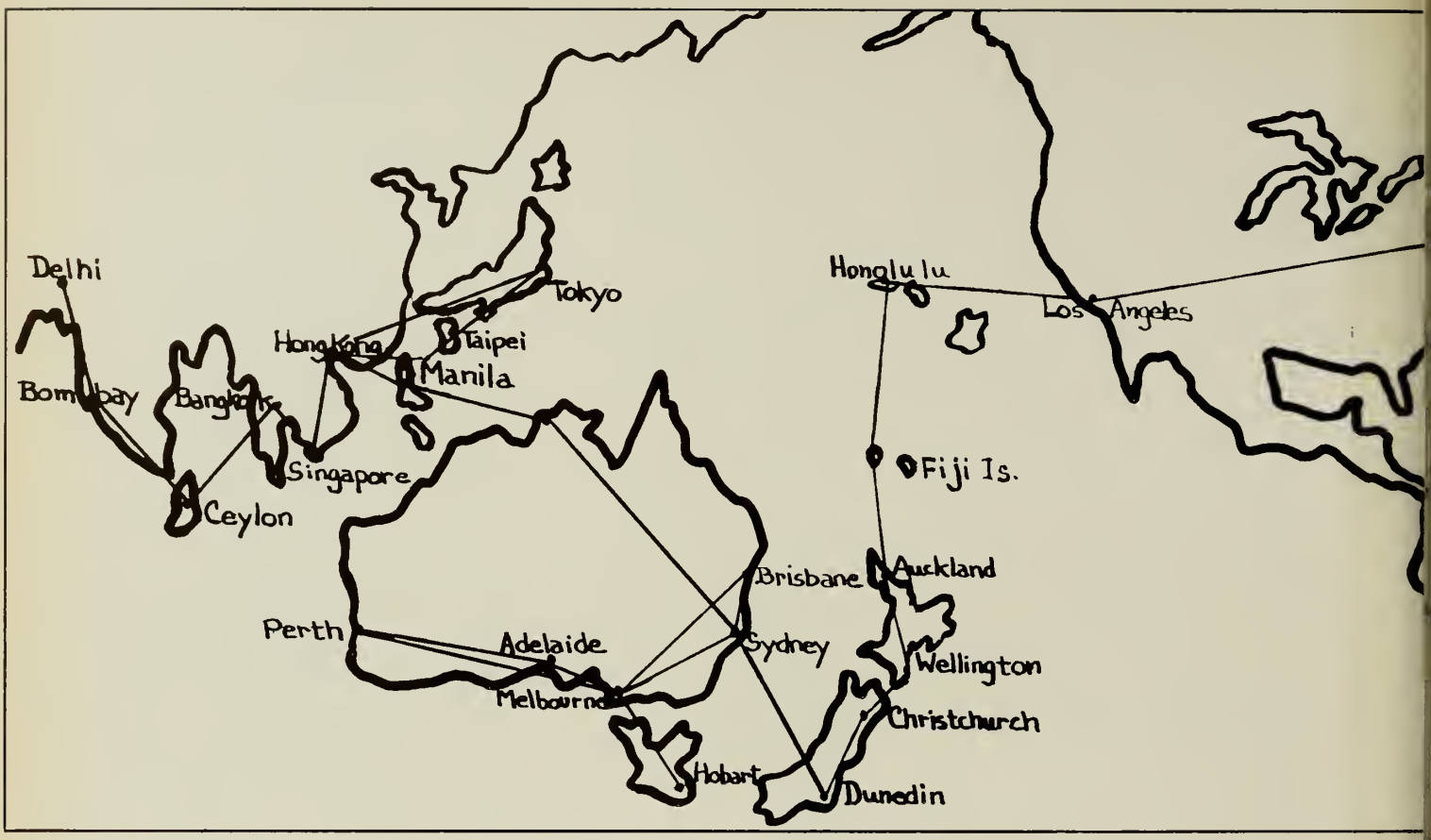
At Perth, the westernmost city in Australia, we spent one of the busiest weeks of our trip. During the six days I was there I gave eight lectures and attended many clinics and conferences. We managed to save a short time for fishing near the island of Rottnest, the natural habitat of the marsupial kangaroo rat, the quogga. We saw several of them, about the size of a large rabbit; also thousands of ducks on the salt lakes which are game reserves. We collected about forty fish in two hours of fishing, some of them brilliantly colored and quite unusual in size and shape.

Melbourne was our next stop. It has more university atmosphere and more personality than the larger city of Sydney. Excellent medical work was going on, particularly in the Royal Melbourne Hospital, the Children's Hospital, and the Alfred Hospital.

Professor Arthur Schüller, the world-famous neuroradiologist of Vienna, was living in a suburb of Melbourne. We visited him and his wife one evening and recalled many of our common experiences at international meetings. We were sorry to hear later that Dr. Schüller died in the spring of 1958. On a day's drive through the country we visited various bird sanctuaries and saw some of the strange creatures of this "down-under" continent. In addition to the duck-billed platypus, we met such creatures as the cuddly koala bear, the spiny anteater, kangaroos and wallabies of fifty different species, a wombat, a bandicoot, several goannas, and we saw many remarkable birds, including the famous kookaburra.

Our final few days in Sydney coincided with Easter holidays and the annual horticultural show, the stock shows and, of course, the Easter Handicap Races. One of our most enjoyable visits was a trip to the famous Sydney Zoo, escorted by the patron saint of the zoo, Sir Edward Hallstrom. Sir Edward has spent a great deal of his time and fortune in making the zoo as complete and as excellent as possible. We also enjoyed a day at the races on the famous turf track at Randwick, where the horses run clockwise. In spite of this I had no more success in picking winners than I have with our counterclockwise rotation.

*The author with 2 small rainbow trout.*




Hydatid cyst disease is still quite common in Australia and New Zealand where it causes 20% of all solitary lung nodules. 77% of the cysts in children occur in the liver but they are often found in the lungs on a routine chest X-ray. They do not calcify in the lungs but may show calcium if the pericardium or heart is involved. We saw them in the brain, bones, spleen, kidney and other organs, simulating primary bone tumors when they occur in the long bones.

Carcinoma of the skin was common in Australia, probably due to the high total hours of sunlight. There are, for example, 600 new cases of epithelioma a year at the Peter MacCallum Clinic in Melbourne. They have a four-MEV linear accelerator, 9 medium voltage X-ray machines, and a staff of 8 full-time physicians, plus 4 physicists and numerous registrars. Their teaching and investigation are good, but they are not closely affiliated with the University or the Medical College. There are few full-time radiologists either in New Zealand or Australia. In fact there are very few full-time clinical professors in any of the medical schools, but there has been a recent trend toward more full-time physicians in clinical and radiological fields.

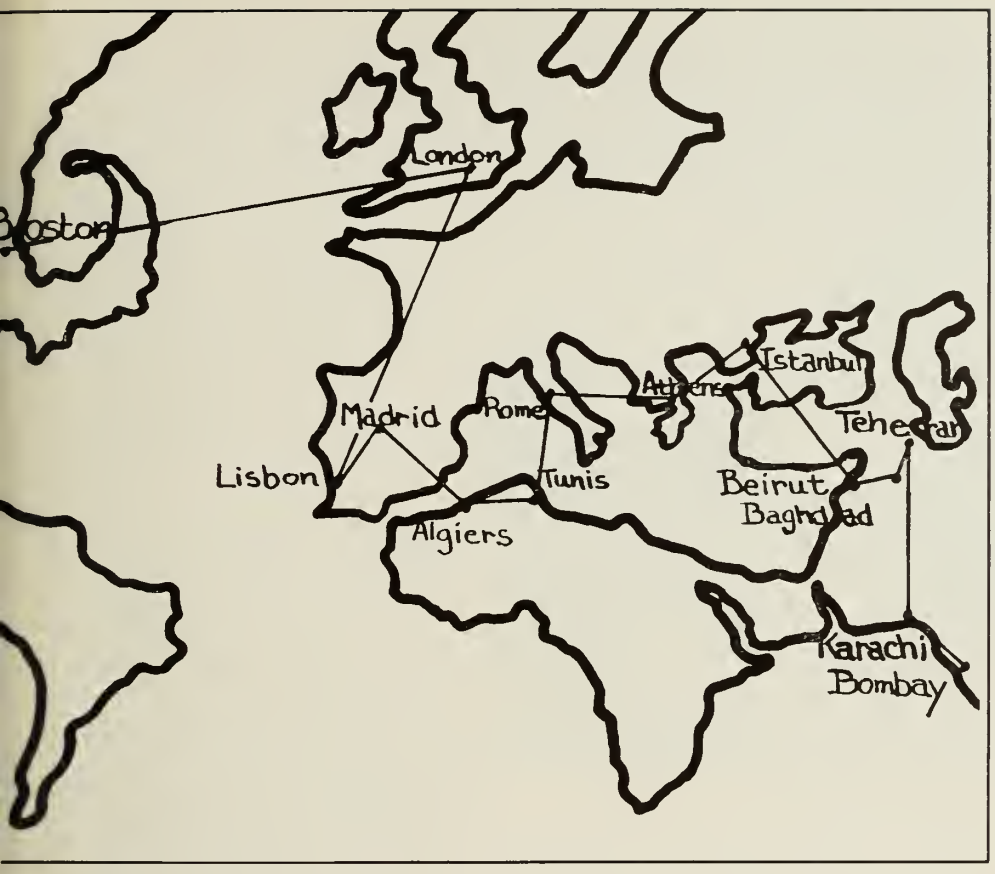
We flew via Darwin to Manila for the meeting of the Philippine Medical Association. The early morning trip up the Philippine archipelago was gorgeous and carried us over the numerous green islands, blue lakes, mountains and inland seas where history was made in the recent naval battles. Our several days of sight-seeing in Manila included an introduction to the national sport of cockfighting and the fascinating sport of jai alai.

The annual medical meeting was held in Baguio City, the cool summer capital of the Philippines, situated north of Manila about a mile high in the mountains. President García attended the meeting and spoke to its members. His minister of health for the Philippine Islands, also named García, is a radiologist of high standing in Manila.

In the Philippines, the number-one killer in all ages is dysentery. None of the physicians, however, seemed to be interested in this problem perhaps because it offers no challenge and is not unusual or dramatic. Most of the dysenteries were of the ordinary bacterial type probably from contaminated food or water. Tuberculosis was the second most important public health problem of magnitude. Malnutrition was common in the cities.

The medical schools in Manila, of which there are many, have thousands of students. There has been a marked overproduction of doctors and lawyers since their "emancipation." The hospitals are badly overcrowded but there is certainly plenty of rich clinical material. Hepatomas are common and, strangely, chorionepithelioma seems to be common here as well as in Hong Kong, Thailand and Indonesia.

The next stop on our itinerary




was Taipei in Taiwan (Formosa). Taipei was a busy place, crowded but interesting, and we enjoyed our stay of a week distributing our time equally between the two medical schools because there is some rivalry between the Chinese from the Communist mainland and the native Formosans. Their medical equipment and conveniences are sparse but again, the clinical material is excessive. We stayed at the beautiful hotel which was built from the ruins of a Shinto shrine now called the Golden Dragon or the Grand Hotel.

We were interested to learn that the number-one cancer in Chinese males is primary cancer of the nasopharynx, quite similar to our transitional cell carcinoma or so-called lymphoepithelioma. This tumor is quite sensitive to irradiation but there are very few permanent cures. The number-two cancer in males is primary in the stomach and number three is hepatoma. In women, the number-one cancer is in the cervix, number-two in the breast and number-three is of the nasopharynx. 75% of the natives are said to have one or more intestinal parasites.

General Chiang Kai-shek's minister of health is a radiologist, Dr. Wu Ching, who has visited us in Boston several times. Dr. Wu was opening an institute for atomic medicine in the suburbs of Taipei while we were there.

Our next jump was from Taipei to Tokyo, where we arrived just in time to join the Conference on the Peaceful Uses of Atomic Energy. The Imperial Hotel where we stayed was designed by Frank Lloyd Wright for a competition in Mexico and seemed strangely out of place with its Aztec motif. Our professional activities in Japan were somewhat limited, except in Hiroshima, and more time was spent in visiting and sight-seeing. We went with Dr. Toshio Katow, the professor of radiology at Keio University, to his villa in the hot-springs resort at Atami, then on to Lake Hakone with its view of Mt. Fujiyama, then through some very scenic country back through Yokohama to Tokyo. We took part in a general meeting of the Japanese Medical Association. As a souvenir of the Medical Society meeting, each of us was presented with an original, modernistic painting by a Japanese physician, Dr. Shigeo Migata, who has made such a success of his art that he has given up the practice of medicine.

From Tokyo we took a night train to the University City of Kyoto. Kyoto is in a valley surrounded by hills and has many Shinto shrines, Buddhist temples, and historical associations with the ruling family of Japan. We visited the Medical College and Univer-

*Royal Barge — Bangkok*

*His Majesty King Pumiphon of Thailand at dedication of the new Children's Ward in Bangkok.*

sity, gave a lecture to the students and staff through an interpreter and had a very enjoyable time sight-seeing. We saw a large factory in Kyoto making some excellent X-ray machines and equipment including X-ray tubes which are much better than any previously made in Japan. The factory had just completed a small betatron and had made parts of a cyclotron which was in use at the university laboratory. In most of the hospitals, however, modern X-ray equipment was woefully lacking and the films were technically of very poor quality. (Most of the physicians in Japan had obtained their medical education either in pre-war Germany or through German teachers and textbooks, so that many of the customs of the elder Japanese physicians were well behind the modern standard. The younger physicians are studying either British or American textbooks and are more up-to-date in their knowledge and ideas.)

In Hiroshima we stayed at the Atomic Bomb Casualty Headquarters. We were privileged to go over the records of the commission, particularly in relation to leukemia in the survivors of the A-bomb explosion. We found that the incidence of leukemia had reached its peak about 1950 when it was ten times the normal incidence, remained at this level two or three years, then fell off rapidly and was back to a normal level in 1956 where it has apparently remained. In all of Japan in the past few years, there has been a 50% increase in the incidence of leukemia, but this could be due to better case finding. Other countries have had even larger increases. For example, in the United States where the incidence was 6.2 per 100,000 in 1954, it was only 2.1 per 100,000 in 1930. The estimates of the U.S. Army for the total number of dead and missing after the A-bomb is 92,000 people. This equals the total number of people killed or missing as a result of all of the bombing of London during the 8-month period from September 1940 to May, 1941!

I was told that the number-one cancer in Japan, both male and female, was stomach cancer. Tuberculosis is still quite common and is not well controlled. Overpopulation, one of Japan's main problems of the past, is apparently being solved by birth control, chiefly through legalized abortion. There are many medical schools in Japan, some of them low grade; but some excellent work is being done in the best medical centers. On the whole we were delighted with our three weeks in Japan. We were very well received and well treated and we felt that the people we met were friendly toward the West and definitely afraid of and resistant to the Communist influences.

Between Japan and Thailand we spent several days in the Hong Kong area, close to the Bamboo Curtain. We heard of several families of pure-bred Chinese near Macao who exhibited the hereditary thalassemic trait, with typical bone changes shown on the X-ray films. The probable explanation for these traits was not learned until a year after our return to Boston and then was marked "top secret."

In the beautiful temple city of Bangkok we took a sight-seeing trip along the large and muddy Chao Phya river which runs through the center of Bangkok. The first annual meeting of the Harvard Medical Association of Bangkok was held in my honor.

**Dr. Sosman lists some of the colleagues and friends he met on his trip around the world:** *Dr. Stafford Warren:* at Los Angeles; Dean of the Medical School at U.C.L.A. *Dr. Basil de Lambert:* in New Zealand; former Fellow in Radiology PBBH. *Prof. Arthur Schüller:* at Melbourne; neuro-radiologist of Vienna. *Sir Alexander and Lady Murphy:* at Brisbane; visited and worked at PBBH. *Sir Edward Hallstrom:* at Sydney; director of Sydney Zoo. *Dr. Sison:* in Philippines; gynecologist to University of Philippines. *Captain Phillips:* at Taipei; U.S. Naval Medical Plant. *Dr. Wu Ching:* at Taipei; Chaing Kai-shek's Minister of Health. *Dr. J. Hong Lui:* in Taipei; HMS, '13; Head of Red Cross in Taiwan. *Dr. Hirokawa:* at Tokyo; works with Dr. Landis in Physiology. *Dr. Shibata:* at Hiroshima; works with Dr. Alt in Beverly Hospital. *Dr. C. A. Wang:* at Hong Kong; HMS '43B. *Bill Curran* and wife: at Hong Kong; HMS '52. *Dr.* and *Mrs. Ochsner:* at Hong Kong; Professor of Surgery at Tulane. *Dr. Luang Pyn:* at Bangkok; Dean of Medical School at Bangkok; former resident in radiology at the PBBH. *Susan Frost Parrish:* at Bangkok; American Embassy U.S.I.S.; Secretary in Student Health Clinic. *Ekjai Khambu:* at Bangkok; HMS '43B. *Drs. Pritchard, Leymaster and Brown:* at Bangkok; working for USCOM; HMS '36, '42. *Dr. Philips Green:* Professor of Orthopaedics and Pediatric Surgery; HMS '19. *Dr. Athle* and wife: at Bombay; Resident in Radiology at PBBH. *Dr. John Wilson:* at Beirut; Associate Professor of Surgery at the American University Med. School in Beirut; '39. *Dr. Angeliki Inglessi:* at Athens; former graduate student in radiology at the PBBH. *Dr. Julio de Abreu:* at Estoril near Lisbon; Fellow in Radiology at PBBH. *Dr. James Patterson Ross:* at London; President of Royal College of Surgeons and Chief of Surgery at Bart's in London; formerly a resident under Dr. Cushing at the PBBH.

It was attended by only one bona fide medical graduate, though there were many postgraduate students, most of them from the School of Public Health. The royal family of Thailand is public-health-minded and have a large and well-organized department of public health. Malaria has been almost completely eradicated, but there are still many cases of dysentery, tuberculosis and parasitic infestation.

We visited the Pasteur Institute where the anti-venoms are made. One of the first demonstrations I saw was the extraction of venom from a cobra which had been given radioactive iodine. The venom was highly radioactive and could thereby be traced when it was injected into experimental animals. We also saw some excellent splenoportograms in cases of amoebic abcesses of the liver, of which they see as many as fifty a year in one hospital. The main hospital was not very well equipped as far as modern instruments go, but it has been improved since the War and much new equipment is on the way. As many as five or six hundred patients crowded the dispensary every day, many of them hoping in vain to be admitted to the hospital. Thailand has only 2,400 qualified doctors for its 24 million people and 100,000 lepers. In both Thailand and Burma and to some extent in India, cancer of the tongue, cheek and lips is the number-one cancer killer and appears to be definitely related to the associated chewing of betel nut plus lime and tobacco. Cancer of the cervix was the most common cancer in women in Thailand and Burma.

*Imperial Palace, Bangkok*

*Two women, carrying water from the well at Jericho.*

After a side trip to Rangoon, Burma, we arrived in Singapore, a city of three major ethnic groups. About one million Chinese, 150 thousand Malays and 100 thousand Indians inhabit this city, which boasts an excellent medical school and hospital. We ran into one unusual disease which has been the subject of considerable interest there, "Eosinophilic lung." This seems to be more common in the Indians and rare in the Chinese. It is a prolonged affair with faint patches of pneumonitis by X-ray examination and a variable fever, severe cough and shortness of breath. The disease may be prolonged unless arsenic is given. This seems to cause prompt and complete cessation of the symptoms in most cases. Recent complement fixation tests suggest that microfilaria may be causing this disease but they cannot be demonstrated in the blood or sputum.

We were entertained at several large Chinese dinners and by large, I mean many courses. An informal dinner has only about 12 courses. The larger dinners for distinguished visitors may run to 24 courses. Our hosts seemed complimented and pleased that we could handle our food with chopsticks. The supreme test of one's dexterity with chopsticks was to handle small, slippery, hard-boiled quail eggs, three in a row without dropping one. The portions of fish lips, sea slugs and octopus were less difficult. By contrast, the Malayan food is more like the Indian meals, curried chicken and rice; sago, cocoanut milk and syrup are often served for dessert.

Arriving in Bombay via the island of Ceylon we found the monsoon season had started and we were driven through a terrific downpour to the Taj Mahal Hotel, a huge old place with marble floors, big rooms

*Dangerous traffic on the road to the Taj Mahal; the driver is sound asleep on the footboard. (The smiling camel's name is Englebert.)*

and high ceilings. After several days of entertainment and meetings in Bombay with this deluge, we made a side trip to Delhi.

The old city of Delhi is closely packed, dirty and crowded, but New Delhi, the modern and spacious Indian equivalent of Washington, may eventually be a beautiful capital city. We had a good visit with the radiologists of New Delhi and a long informal evening session.

From Delhi we took off in the early morning for Agra across a hot, dry, dusty desert in a rented 1955 Chevrolet. Our two bearded Sikh drivers spoke only a smattering of English but this was no handicap to our enjoyment of the imposing temples and the glorious Taj Mahal. When we drove back to New Delhi the temperature was 114°.

One of the outstanding impressions we received in India was that of a tremendous mass of people, many of them poorly nourished and most of them with the characteristic sad look which contrasted with the happy, often smiling faces seen in equally crowded areas in Hong Kong or Singapore. The difference apparently is racial, rather than nutritional. There were many cases of obvious malnutrition and we were told of many deaths by starvation. The mortality in children was astonishing. Only 50% of the children reach the age of 10 years. Most of the others die from acute dysenteries or contagious diseases.

With an overnight stop in Karachi, West Pakistan, we went on to Teheran, Iran.

Teheran, a modern city with a good university and a fair hospital and medical college, has a much better climate than most of India. The evenings were cool and pleasant. From our two-room penthouse suite we could see the snow-covered mountains to the west of the city. In Teheran lectures were neglected because of various national and religious holidays including our own Fourth of July and the Moslem Sabbath (our Friday). We attended the Fourth of July reception at the American Embassy. About 2000 other Americans were there partaking of the usual hotdogs, hamburgers, beer, Coca Cola, speeches, baseball games, rumors and gossip.

From Teheran to Beirut, one crosses the deserts of Iran, Iraq, and Syria, passes over Baghdad, the Euphrates, the oil-pipelines and mountains to the high coastal range in Lebanon. The next ten days, as a unit, were probably the most enjoyable of any of our visits so far. Beirut is a modern city, still largely French in its orientation and its customs, but the population is a heterogeneous mixture of races and religions. It was amazing that these groups seemed to get along as well as they did. The current dilemma, however, gives some idea of the dangerous situations that can quickly mushroom under such circumstances.

Using Beirut as our center, we visited in succession, the Roman ruins at Baalbek, the old city of Damascus, and finally, the most ancient of all, the ruins and excavations at Byblos. We also flew to Jerusalem and visited the sacred, historic areas on the Arab side of the city and Bethlehem, the River Jordan, the Dead Sea and the old city of Jerico. It seemed to us as if we were back in Biblical times, for the customs seemed very little different from those described in the Bible. It was a strange sensation,


*Hydatid cyst may turn up in lungs unexpectedly. This young man was thought to have embryoma of the testicle.*

that of living horizontally through marvelous scenery and vertically through ancient history.

Back in Beirut, we paid for this sight-seeing and vacation by giving four lectures to the staff and medical students as well as numerous conferences with the radiological staff. We found that plenty of hydatid cyst disease exists in Lebanon, but we were told that no Paget's disease of bone had been seen and that patients did not have colon polyps or diverticula.

Our major academic duties were now over. We relived history in Istanbul and in Greece (where we visited the temple to Aesculapius at Epidauros) and made easy jumps to Rome where our stay included one day at the University of Rome, each of whose clinical departments have separate buildings and are practically empires in themselves. The professor of radiology, for example, has an operating room in his department fully equipped with a surgeon who does the radiologist's bidding!

Algeria, Tunis, Madrid, Lisbon, and a week in London, where we renewed many former friendships, were final stops on our trip, and we landed safely in Boston on August 14, 1957, having visited 25 countries, and about 50 major cities, in 176 days. I had given 50 formal lectures and more than 70 clinics and conferences. We had circled the globe, with a log of 42,000 miles by air.

Much of the pleasure of our voyage stemmed from having people we know meet us at each port, take us in to show us the interesting things and entertain us as friends rather than as tourists. I believe that as a result, the Harvard Medical School, the City of Boston and the Peter Bent Brigham hospital are better known in some cities on the other side of the world than they were before we left, and I hope someone will subsidize me to make another trip around the world in the other direction, whether it be in eighty days, or one hundred and eighty. I have slides, will travel.

*The earliest known representation of a dissection scene (13th century). The dissector, a layman, is holding the liver in his hand. Other organs are scattered around; at left are monk and physician.*

# DIAGNOSIS DEFERRED

## Corporis Fabrica

Anatomy, melancholic or otherwise, had a more auspicious beginning in the pioneer village of Ipswich, Massachusetts, than in the previously enlightened isles of Greece where Alcmaeon of Croton, as a result of his meticulous dissections, came to the conclusion that goats breathed through their ears. In Ipswich Giles Firmin, who for three years had studied medicine at Emmanuel College in Cambridge, dissected so skillfully and lectured so eloquently in the mid-seventeenth century that the Reverend John Eliot, apostolic guide to the noble red man, wrote "We never had but one anatomy in the country, which Mr. Giles Firmin, now in England, did make and read upon very well."

As time went on life in the colonies became more complicated and so did death, at least so far as the disposal of the body was concerned. By 1784 the only legal way to procure a cadaver in Massachusetts was through the "Act against Duelling" of that year, a bold piece of legislation that provided for the body of one killed in a duel being

turned over to a surgeon if one chanced by. Otherwise it was buried in a nearby highway, without a coffin, a stake being driven through it. Thus from its founding in 1783 until 1805 the Harvard Medical School could legally offer a course in practical anatomy only in the event of a successful duel. In 1805 the bodies of murderers also became available, but at the discretion of the magistrate.

The expedient method of obtaining enough cadavers for the eager anatomists of the period became obvious, to the point that a law was passed in New Hampshire in 1796, coincident with the institution of medical instruction at Dartmouth, providing a penalty of $1000, public flogging up to 39 stripes, or a year in prison for disturbing a grave. Vermont followed suit in 1804, as did other states. Harvard, law-abiding to its puritanical core, introduced "costly wax preparations" about 1810, according to Waite in the *New England Journal of Medicine,*[1] although Professor Dwight[2] relates how his grandfather, Dr. John C. Warren, participated, when a student, in the resurrection of a body. As Warren himself related it, "When my father came up in the morning to lecture, and found I had been engaged in this scrape, he was very much alarmed; but when the body was uncovered, and he found what a fine healthy subject it was, he seemed to be as much pleased as I ever saw him."

In 1831 Dr. Warren was instrumental in persuading the Massachusetts legislature to enact the first practical anatomy law in the country — a year before Great Britain's. His own skeleton, as a token of his conviction regarding the final service that the human body may perform, still hangs in the Warren Museum.

Anatomy, however, was an academic pursuit usually outside the law during a long period before accommodating acts in its support were generally passed. Grave-snatching was of frequent occurrence and so inflamed local populations that mob action was occasionally incited. The first such mob scene recorded in this country was the famous "doctors' riot" of 1788, described by Dwight: "A student of the Bob Sawyer type, at the New York Hospital, showed a boy an amputated arm, telling him it was his mother's. It so happened that the mother had recently died, and on her grave being opened, no body was found. The hospital was sacked. Students and doctors were imprisoned for protection, and subsequently the mob, having vainly searched for them in suspected places, discovered their retreat and tried to take them from jail. The soldiers at last fired, killing several persons." In Worthington, Ohio, in 1839, a crowd attacked the medical school and found 2 bodies. The faculty was then directed to load all the movable possessions of the school into wagons which were escorted to the county line and thus medical education at Worthington ended.[1]

Waite also describes a once famous incident occurring in Chebacco Parish in Essex County, Massachusetts, in 1818. Lights having been seen in the hillside graveyard on the night of January 10, investigations were made when spring came north that year and 8 graves were found to be empty. The finger of suspicion was pointed at the local physician, Dr. Thomas Sewall, who was tried in November, 1819, for illegal possession of certain bodies. Despite his defense by Daniel Webster he was found guilty and was fined $400 and costs in each case. Dr. Sewall removed from the scene of the crime, settled in Washington, D. C., was elected professor of anatomy in Columbian College in 1821, founded the National Medical College as its Medical Department in 1825, was the first professor of anatomy and physiology and later professor of medicine, and its dean for nineteen years.

Anatomical laws in general provide for the disposition to medical schools of bodies that would otherwise be buried at public expense — the unclaimed remains of those who have died in state and county hospitals and almshouses. There are, however, many exceptions; excluded in the law of 1831 were "veterans, strangers, travelers who died suddenly, persons who requested that their bodies be buried or delivered to a friend, dependent children and disabled persons." The chief difficulty under the similar Massachusetts act of a century later is that the advancing welfare state with its "cradle to the grave" care of the individual — except for his instruction in anatomy — has practically eliminated the pauper; there are today no potter's fields.

If anatomy is to continue to be taught effectively, new sources of material must be found to augment the present short supply. As was stated editorially in our esteemed contemporary, the *New England Journal of Medicine,* "The best hopes for the future are a continued awareness of the problem and a frankness concerning it, and the continued maintenance of the good relations that now exist between the schools and the superintendents of institutions from which the bodies must come.

"Of equal importance is the revision of inheritance laws, in states where it is necessary, to permit the bequest of one's body, recognizing the right of the individual to dispose of his remains as of his other property. This has been encouragingly successful in California, where bequeathed bodies are a major source of anatomical material."[3]

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# The Stars Among Men

## Class Day Address, 1958

*J. Englebert Dunphy, M.D.*

It is good for us to gather together to wish the graduating class Godspeed. That we are thus assembled is a tribute to the memory of the late Reginald Fitz. It was he who insisted that these activities should be held here in the Quadrangle as an integral part of the life of this Medical School. When he was asked what would be done if it rained, he publicly dismissed the possibility. "It would never rain on Class Day," he said, and it never has!

Reginald Fitz was a wonderful man. As Roger Lee wrote of him, "His was a valuable life filled with unselfish activities, a life of gentle and solicitous devotion to his family, his friends, to medicine and to his associates and to the many whom he did not know and who did not know him, but who are in his debt." For reasons which will become obvious as I proceed, he was "A Star Among Men." His spirit will be with us always on this occasion.

And on this occasion you, the members of the graduating class, can justifiably reflect upon your accomplishments. Now, as you gird for the eager challenge of the future, is a fair moment for personal assessment. It is quite natural in doing so, to look about and to measure yourself against others. In this way some of you may feel justified. You have a better internship than someone else or you are graduating with honors. Perhaps you were awarded a prize today. Relatively speaking you may feel you have done well. Others may feel dissatisfied or are uncertain about the future, regretting an opportunity lost or keenly aware of personal or other handicaps. All this is a foolish mistake. Comparisons of grades, honors, prizes or internships have a very limited and artificial meaning. The only way to measure yourself is against yourself. This fact was impressed upon me recently by an allegorical dream which I had while traveling coast to coast by airplane.

I was reading "Man Among the Stars" by Wolfgang Müller, the Editor-in-Chief of the monthly German nuclear-energy publication, *Die Atomwirtschaft*. His book deals not only with the technical advances which are necessary for the conquest of space, but it also provides to the uninformed a remarkably vivid impression of the incredible aspects of space. First, is its impeccable order. For example, Halley's comet has an orbit so large that it requires 75½ years to complete it; yet the comet has regularly appeared exactly on time. Second, is the relativity of space. Thus, as Müller points out, a satellite flying to Mars, if it was fired in the same direction as the motion of the earth, should have a speed of about 2 miles per second. As seen from the sun, however, it would be traveling 20 miles per second. As it entered the orbit of Mars it would have to slow down to 13 miles a second in order to land, at which speed as seen from Mars it would be standing still!

The third and overwhelming aspect of space is the glimpse which it provides of infinity. Here is factual evidence of worlds and time without limit. I found the book at this point so absorbing that it overwhelmed me. It was as if one had inadvertently looked into the face of God. It is hard to convey my feelings. I felt alone. Vaguely I could hear the drone of the plane's engines. I tried to collect my thoughts, but these concepts were too much for me. I fell asleep.

I dreamed I was in space. Happily, all my friends were there. In fact, I saw all the people and peoples of the world revolving in infinite and intricate orbits. Time does not permit me to describe the details, but a few generalizations may be of interest. For example, there was an extraordinary paradox of motion in that the more one stayed in one's own orbit, the greater it became and the more it changed.

I saw the deans of many medical schools like suns with hundreds of satellites about them. Spread across the heavens above each dean was a confused blur of statistical stars, a veritable Milky Way. I was told this was the work of the Association of American Medical Colleges. There were professors and heads of departments, fixed and bright and hot if you were near their orbit, but only a dull glow from a distance. Their chief effort was devoted to staying out of the orbits of Deans or Administrators!

This conflict was met effectively by the creation of thousands of committees. Each committee had its own chairman who, while spinning out of his own orbit, kept enough satellites with him so that he imagined himself to have a small universe of his own. Each member of each committee had with him, as required reading, a copy of "The Space Child's Mother Goose" by Frederick Winsor. Time permits me only one quote, but you will get the idea.

> "Probable-Possible, my black hen,
> She lays eggs in the Relative When.
> She doesn't lay eggs in the Positive Now
> Because she's unable to Postulate How."

There were some individuals whose lives were so serene and orderly that the atmosphere about them was as blue as the sky above the earth. Their lives were simple, their orbits orderly and their contributions enormous, St. Francis, Mendel, Einstein, Schweitzer.

There were others about whom the atmosphere was hazy rather than blue. They seemed in a fog, but who can say what they really were if seen from some other part of the universe. Thus, only a few million miles away from the impressive worlds of great medical figures I saw an elevator operator at the Boston City Hospital. He greeted me, as is his custom, with a cheery good morning. At that moment his orbit seemed as large and as impressive as a professor's. Paradoxically, it was more attractive because there was less gravitational pull!

There were, of course, millions of students in space. It was incredible how seldom they arrived at any point in their orbit on time. From time to time, some of them fell out of orbit and flashed as dying meteors across the universe. Many of them spent too much time looking at someone else's orbit. Others were overly awed by fixed professorial stars and were trying to get into the same orbit. Still others were anxious because their colleagues seemed to have a larger orbit or a greater speed. They were not yet aware of what one learns from travel in a space ship. Everything depends upon how you look at it!

ONLY one thing is important in space as in life and that is adjustment to one's own orbit. Don't worry about your gravitational pull. It is greater than you think. It is all you need. If your ship is in its orbit, no one is greater than you. They may appear bigger or may seem to move faster, but from where I am your orbit is greater and your speed is faster. Remember this paradox. The best way to fulfill your destiny is to stay in orbit. When you do, your orbit steadily enlarges. Opportunities open to you which you would have never thought possible. You go places.

You are leaving this school to meet the challenges of your individual careers in medicine and in life. Each of you has a job to do. Whatever it may be, success or failure will be measured only by how you meet the challenge of your own environment, not by how your work compares with what someone else has done or appears to be doing.

Never has it been so important that each individual doctor give completely of himself to the task which is his, whether this be in teaching, in research, in administration, or most important of all, in the practice of medicine. Opportunities for research are without limit, but there is a crying need for critical, careful and exacting workers. Opportunities to teach are rapidly expanding, but there is already a serious shortage of teachers, especially in the basic sciences. The practice of medicine is at a major crossroad. On the one hand, labor is demanding complete medical coverage and this is a justifiable request if one considers the problem from the point of view of the working man with a family and only a few thousand dollars to support them. On the other hand, within the ranks of our profession, there are, unfortunately, a few who would make medicine a business rather than a profession. There are also many among us who are sincere, capable, able and devoted to the care of patients, but who are so indoctrinated with the idea that a good doctor-patient relationship depends upon a personal financial commitment that they can see no other way to practice medicine. In the background stands the Federal Government ready to resolve these difficulties if we cannot do so.

YOU, as the leaders of medicine in the future, must bring courage, wisdom, tolerance and understanding to these problems. Our real strength will not be found in the universities nor in the ranks of organized medicine, but in the individual doctor's relation with his patients, whether this be through private practice, in clinics or on the wards of voluntary, municipal, state or federal hospitals.

The root of evil in such problems stems from faulty communications and misunderstanding. It is a difficult thing to penetrate the mind of your fellow man. Even as I am talking to you and trying to convey my thoughts on this subject, many of you are wandering. Indeed, I daresay that the individual cerebra-

tion of a substantial portion of this audience at this moment may be limited to the simple prayer, "Dear Lord, make him sit down."

This is one of the fascinating things about life. As Charles Dickens once speculated, "It is a wonderful fact to reflect upon, that every human creature is constituted to be that profound secret and mystery to every other: every beating heart is in some of its imaginings a secret to the heart nearest it." We are all mysteries to one another. This is the individuality of man and is an essential part of his dignity. Yet, as doctors, we are privileged to break this barrier more often than the priest and certainly more deeply than the lawyer. On the sick bed we see what a man is as well as who he is. He, in turn, sees something of the secret in us. It is in this singular relation that the true greatness of the physician rests. And here, rather than on the platforms of the American Medical Association or in the halls or laboratories of the universities, lies our future.

The care of the patient is the battle line of medicine. Everything else, medical schools, medical organizations, libraries, laboratories and all teaching and research are but a part of the services of supply. Our reputation as a profession was won at the bedside. We will keep it or lose it on the same field. Thus it is that those among you who enter upon the practice of medicine will have the largest responsibility.

IN the battle, heed this counsel from space. Do not try to be what you are not but be what you are with all your might. Be true to yourself, to your ideals, to your beliefs, to your patients, to your family and to your friends. Do not pull your ship out of orbit for short meteoric gains. Do not imagine yourself a fixed star. We are all satellites, but whoever meets to the best of his ability the challenge of his own environment, appears as a star to others. Opportunity opens to him. His role becomes vital whether he is a dean or a deiner, a teacher or an investigator, an administrator or a practitioner. He becomes a "Star Among Men." How bright is his light and what will be its effect on history? That depends upon how you look at it!

Remember the admonition of St. Paul to the Galatians, "Let every man test his own work and so he will have glory in himself alone and not in comparison with another."

# RETIREMENT

CHESTER NORTH FRAZIER, Head of the Department of Dermatology at the Harvard Medical School, retired from active service on June 30, 1958. He will become Edward Wigglesworth Professor of Dermatology, *Emeritus*. Dr. Frazier will simultaneously retire as Chief of the Dermatological Service at the Massachusetts General Hospital.

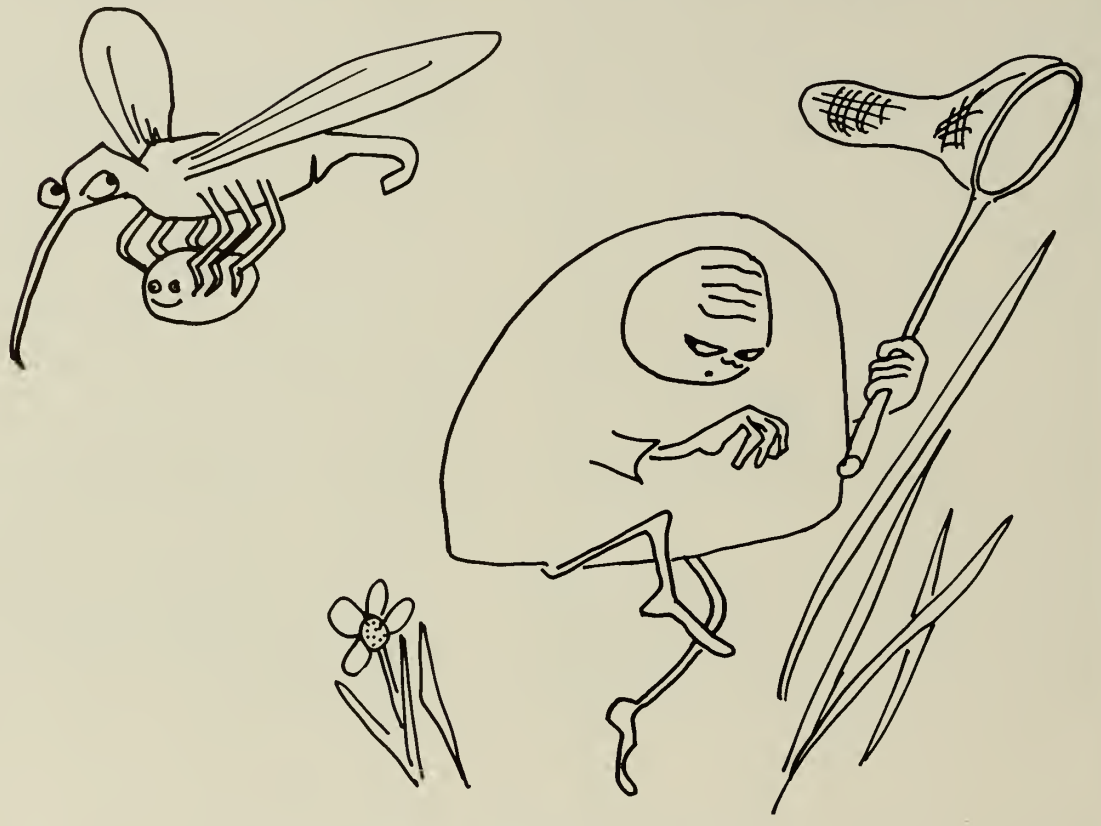
Dr. Frazier came to Harvard in 1948 from the University of Texas, where he had been head of the Department of Dermatology and had served as professor of dermatology and syphilology.

Dr. George P. Berry, Dean of the Faculty of Medicine, commented: "During the decade that Professor Frazier has served the University, dermatology has advanced rapidly." Dr. Frazier recognized, Dr. Berry said, that dermatology needed to be taught as part of medicine rather than solely as a medical specialty. "He has taken the teaching of dermatology from the pressing demands of the clinic and private practice and placed it on a full-time University basis," he added.

A forceful proponent for bringing greater research to bear on the many obscure problems relating to disease of the skin, Dr. Frazier's own contributions to research in dermatology have included studies on the relationship of skin disease to nutrition. He was the first to describe a skin disease caused by Vitamin A deficiency. During 19 years in China (1922-1941), while teaching at the Peiping Union Medical College, he carried on research in skin diseases of the Chinese, and trained Chinese doctors in the treatment of skin disease and syphilis. His studies have also included the biology of syphilis, the effects of race, sex, and hormones in resistance to syphilis, and the mode of action of penicillin.

Born in Portland, Indiana, Dr. Frazier attended Wooster College and received the S.B. degree in 1915 and the M.D. in 1917 from Indiana University. In 1947 he was awarded the Doctor of Public Health degree by the Johns Hopkins University. He also did postgraduate work at the University of Munich, Germany. Before joining the Faculty of Medicine at the University of Texas, he had taught at Indiana University and Johns Hopkins.

# A Tale of Two Maladies



*Albert Levin, '60, and Melvyn Thorne, '60*

"You university folks don't like us shooting penicillin and the wide-spectrum stuff into these cases, I suppose." The local doctor spoke with a mixture of apology, resignation, and honest perplexity. "But I really don't see that it does any harm, and who knows, it may protect them from something."

An unidentified disease had been plaguing this Northern California valley town all through the dusty hot month of July, resulting finally in a few long-distance phone calls to the California State Department of Public Health headquarters in Berkeley. An investigating team had been quickly assembled, consisting of one epidemiologist from the Department, another from the University of California, and a cardiologist on loan from the National Public Health Service for training in epidemiology. When a member of the team had stepped into my office, which was cluttered with the pulmonary testing devices which were the core of my slow-paced summer research project, and had asked, "Mel, how would you like to join us for a three-day investigation of a reported epidemic?" I had jumped at the opportunity. Our exploration in Red Bluff began as we listened to one of the town's twelve doctors.

"The *Daily News* did a front page article on it — called it the 'mystery malady.' Not a bad name; I'd guess that it's probably caused by some neurotropic virus, but no one really knows. In any event, patients kept coming to me for treatment. I treated them and they got better. So did those who stayed at home and got no treatment."

His use of the past tense should not have come as a surprise. A veteran epidemiologist had warned us: "The best way to stop an epidemic is to send someone out to investigate it." Two days before our arrival, telephone estimates ranged from fifty to one hundred cases of an acute central nervous system disease raging in Red Bluff. But when we arrived, acute cases were scarcely to be found. Local doctors, perhaps intimidated by the immediate presence of investigators hungry for facts, made conservative revisions of their previous estimates. Many of the townspeople, as we later learned, read the newspaper

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This is an account and comparison of epidemiological investigations undertaken by two H.M.S. students. The authors participated with fourteen other medical students from all parts of the United States in an experimental training program conducted by the California Department of Public Health. The program was designed to introduce medical students to public health activities via individual research projects, lectures, seminars and field trips. Among the areas covered during the summer were air pollution, neurotropic virus epidemiology, heart disease epidemiology, child health, X-radiation hazards and alcoholism.

description of the disease's benign course and decided to stay home rather than consult a doctor. Or perhaps some superior intelligence had communicated our arrival to the crafty germs responsible for the illness. Whatever the reason, the epidemic was vanishing before our eyes.

Two questions then faced us. Is the epidemic on the decline? *Was* there an epidemic in the first place? We had come to Red Bluff on what might turn out to be nothing more than exaggeration or rumor. But now that we were there, we set about the ambitious task of defining the disease or diseases which had caused such a commotion: identifying its signs and symptoms, describing its natural history, tracing its mode of transmission, and hunting down its causative agent.

Our picture of the disease began to take shape slowly as we picked up pieces of the puzzle from various sources. At a hospital luncheon in the little olive-producing town of Corning, ten miles south of Red Bluff, we learned that three doctors in that town had experienced whopping headaches within the past few weeks. Two of these doctors reported that their teen-age youngsters were presently suffering from an illness characterized by transient fever, malaise, nausea, headache and stiff neck. Interviews with convalescent patients revealed similar stories: a young mother vividly recalled her excruciating frontal headache, and her little daughter had stayed home from nursery school for several days because she felt "sick all over" and later developed a body rash. Laboratory reports from the St. Elizabeth Hospital added to the picture. Their CSF taps contained 100-1000 WBC/ml., mostly lymphocytes.

Thus, a characteristic pattern of fever followed by headache, followed by stiff neck or low back pain was emerging. We were convinced that a genuine epidemic was in progress, and its probable cause a specific infectious agent.

While continuing to broaden our clinical picture of the disease by taking histories on convalescent patients, we intensified our search for the acute case. Our goal was to culture a virus from stool specimens and to demonstrate a rise in antibody titer between sera collected during the acute stage and two weeks later during convalescence. In spite of the fact that our investigation could not offer any help in their immediate problem, the physicians of Red Bluff offered to phone us during the day if any new cases appeared, and we checked with them each morning for overnight cases. In this way a sizeable list of suspects was soon compiled.

The identification of acute cases created a new problem. Back in Berkeley the Viral and Rickettsial Disease Laboratory was ready to run through its complete battery of diagnostic tests for the 37 neurotropic viruses which are kept alive in its refrigerators. (Several of these viruses are orphans, still looking for a disease; others are so fussy about climate that they have never been isolated outside California!) But the cost of isolating and identifying the agent from a single patient runs somewhere around fifty dollars. It therefore became crucial to select only certain patients for specimen collections, and consequently we were faced with the choice of sampling only those with the severe headache or fewer of all patients acutely ill with any of the reported complaints. Upon this choice rested much of the outcome of our investigation, since we eventually expected to associate a constellation of clinical symptoms with a specific virus. The problem was resolved by taking thorough histories and excluding all cases whose symptoms could be reasonably explained by diseases other than our mystery malady.

The little girl who stayed home from nursery school might have been a nuisance to her mother, but she provided us with a promising clue. A telephone call to the nursery-school director revealed that 8 of the 13 children in her charge had come down with "it" during a two-week period. They had all shown malaise followed by evening fever of around 103° lasting for two days, followed by a slightly raised bright red rash on the upper portions of the trunk. The rash lasted about two days and was only occasionally followed by a headache. Our previous impression of the disease was modified by these new findings. Did the same agent cause this exanthematous disease in children and the acute cephalalgia in adults?

The proof would be the isolation of the same organism from both children and adults. Further detective work proved highly suggestive. In the homes of the sick nursery-school children we learned that other members of the family had become ill within the same period. Their brothers and sisters gave the same history of fever and rash, while their parents were stricken with fever and intense headache. Our mystery malady now appeared to be a single disease with different clinical pictures in children and adults, involving person to person spread, facts which would have to be explained.

With so little information on the origin of the epidemic, we found ourselves considering local theories. One doctor happened to recall that the first case he saw was that of a recent Japanese immigrant employed in a local strawberry plant. Our first few convalescent patients were amused when we probed their dietary habits for some evidence of recent strawberry consumption. But, alas, this path led nowhere and was soon abandoned. Another lead was supplied by the local newspaper editor, who noticed that the log swamp of a nearby match company was breeding increased numbers of "wood mosquitoes" this year. "Don't know as how that would do it, though," he conjectured, "seein's how they don't seem to bite humans."

After three days of virus hunting we returned to Berkeley, if not exactly triumphant, at least with a preliminary description of the syndrome we had seen, and specimens of blood and stool from which we hoped to obtain the answer. At headquarters we found response to the special bulletins which had been dispatched to all county health officers. Similar, unidentified CNS illnesses were reported throughout California, from Mt. Shasta to San Bernardino. Coxsackie B5 virus had been implicated in specimens received earlier from an alert private physician using the free CSPHD laboratory services; Echo 9 was found in another. Present data, as I know them, are inconclusive. One patient had Coxsackie B5 cultured from two stool specimens, but Echo 9 from the third.

Here ends the story of the Red Bluff epidemic as I was concerned with it, since the results of our field work depend on two months of laboratory investigation still in progress.

While we were tracking down this acute communicable disease, Al Levin, in San Francisco, was busy investigating another epidemic, but one vastly different than the Red Bluff "mystery malady." Under the guidance of CSDPH epidemiologists, he and a 3rd year medical student from Western Reserve had undertaken a more complex and long-range study than ours had been. Comparison of our dissimilar experiences afforded us some fresh insights into the nature of disease. His account follows.

In contrast to the transient epidemic Mel has described above, the one we were investigating has been raging for about 30 years, and has increased continuously since it was first discovered. The disease shows a striking male preference and has a higher incidence in some parts of the world than others, being very common in the United States and relatively rare in China. While initially a disease of the aged, it has become predominantly a disease of middle age, and has recently been found with increasing frequency in young males. Presently the leading cause of death in adult males in the United States, this disease has been variously labeled arteriosclerotic heart disease and coronary artery disease.

At the outset we asked ourselves one simple question, then spent the summer trying to answer it: What relation do cigarette smoking and hypertension have to arteriosclerotic heart disease? We found that tracking down the etiology of ASHD is a more complex business than isolating and identifying a virus. The potential etiologic agents are so diverse that only one or two of the many factors incriminated in the disease process can be studied at a time, and the ones we chose, cigarette smoking and hypertension, are hard to measure and difficult to interpret.

Unaware that they were being observed by two medical students, the 5,200 members of Local 10 of the International Longshoreman's and Warehouseman's Union continued their usual job of handling cargo on the eighty miles of waterfront around San Francisco. Instead of bloods and stools, our raw materials consisted of death certificates, clinic (out-patient) summaries and hospital records. The investigation led us from ships full of copra to hospital record rooms. In the course of this epidemiologic odyssey we brushed shoulders with medical librarians, cardiologists, union officers, biostatisticians, sociologists and night watchmen. With all these resources, we attempted to approximate the epidemiologist's ideal: a complete record of diagnosed disease in a precisely defined population covering an adequate period of time. Previously, similar attempts had focused mainly on prison inmates and medical students, groups whose environments can be more rigidly controlled and artificially manipulated than the average population.

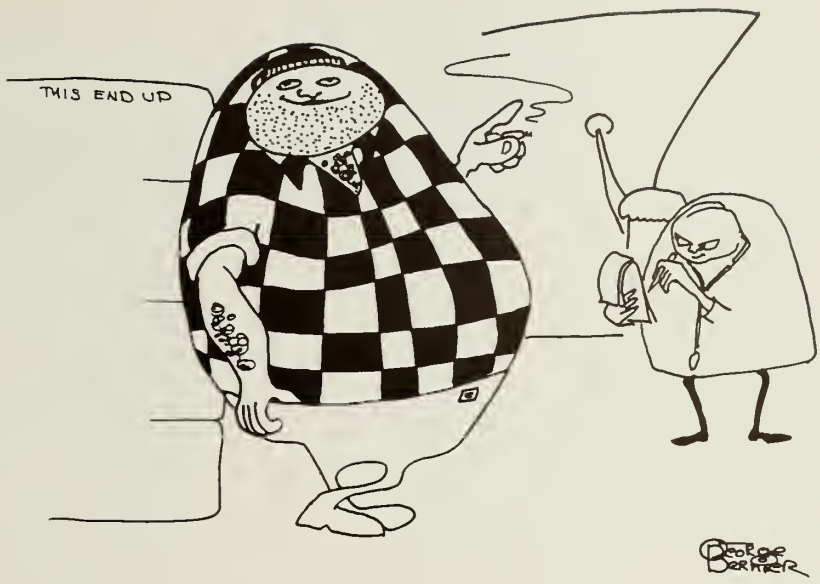
The basic data which we collected in our study was obtained in 1951 when 4,000 of these longshoremen were questioned and examined on the docks of San Francisco. They ran a gauntlet of strange-sounding tests set up on the waterfront for their convenience: urinalyses, EKG's, etc. Many of these men had never visited a doctor in their lives; others feared that the results of the tests would somehow be used to deprive them of their jobs. These apparently healthy men subjected themselves to these annoyances as part of a multiphasic health screening examination organized for longshoremen by the ILWU, public health officials, and the Permanente Health Plan, to which most of them belonged.

The educational task of "selling" the health examination to these men was tremendous. The union threw its full weight behind the project, using its usual channels of democratic coercion, plus some ingenious gimmicks, such as dispatching entire work gangs to the tests on a schedule and issuing health buttons to those who completed the test. These efforts paid off, and 3,994 of the 5,200 eligible men were screened. These screening tests were our source of information on the smoking habits and blood pressures of our study population, and from this data the population was divided into 4 groups:

1. smokers
2. hypertensives
3. smokers and hypertensives
4. neither smokers nor hypertensives.

The longshoremen offered several other advantages as a study population. Since their medical care was centered in the out-patient clinic and hospitals of the Kaiser Foundation, we were blessed with an almost complete record of illnesses severe enough to require a visit to a doctor. And contrary to the impression created by *On the Waterfront,* the San Francisco longshoremen are a remarkably stable working population. One-third of its present membership has been with the

union for twenty years or more, and almost no new members have joined the union since the late forties. While the amount of strenuous work involved in cargo handling has decreased in recent years due to mechanization, the appetites of the men have not decreased proportionately; weights of longshoremen average 17% over the Metropolitan standards. These men also represent the older segments of the working population, with a median age of 49 years; they therefore experienced a significant amount of heart disease during the seven-year period between the initial screening and this summer. Culturally, their backgrounds are quite varied, with large groups of Scandinavians and Poles among the older men, while the younger workers include many Negroes and Mexicans.




Information of this sort, gleaned from the waterfront interviews and union statistics, assumed increasing importance as the study proceeded and we came to realize that in probing this modern epidemic of a chronic illness we were dealing with more than merely smoking habits and blood pressure. As we dug deeper into the background of our longshoremen, these variables became intertwined with other aspects of their lives — eating habits, marital problems, work stresses, body type, parental longevity, the use of leisure time, etc. As compared to the relative security of measuring antibody titers in a virus laboratory, we were tangled in the uncertainties of analyzing patterns of living for stresses — stresses which, by unknown and apparently devious means, express themselves as the atheroma seen by the pathologist at autopsy.

The waterfront interviews were also essential in completing the description of our study population, and upon this description depends our ability to generalize our findings to larger populations stricken with the epidemic of ASHD. Thus, it became necessary to learn how much our knowledge of the disease process was influenced by the idiosyncrasies of four thousand longshoremen.

Having probed the lives and loves of our study population, we focused our attention on a deceptively simple question. What is arteriosclerotic heart disease? We had heard the term used glibly by epidemiologists, cardiologists and biostatisticians. But now an old problem which Mel had met in Red Bluff reappeared: the problem of defining a disease for the purposes of etiologic investigation. While the pathologists' criteria for coronary atherosclerosis are fairly consistent, the clinical patterns associated with this pathology are so varied that some epidemiologists have even asserted that several diseases, each with its own etiology, are concealed under the label ASHD.

Our own data, in fact, reveal two distinct patterns of disease: (1) the heavy smokers who have normal blood pressure, normal body weight, and tend to die suddenly of coronary occlusions relatively early in life, and (2) the hypertensives who do not smoke heavily, but are overweight, have prolonged courses of illness marked by frequent episodes of angina pectoris and tend to die in congestive failure at relatively older ages. These observations provoked a familiar question: Were we dealing with separate disease processes or a single underlying process which manifests itself in different groups of people in different ways according to poorly understood factors peculiar to each?

Our experiences with both ASHD and the Red Bluff mystery malady indicated that our picture of disease is distorted by the very methods employed to find cases of the disease. By using only clinic and hospital records, we missed the milder cases of ASHD which did not bring patients to doctors, for example, the anginal attacks which simulate indigestion. Our results were further distorted by all those factors, psychic as well as economic, which stand between the potential patient and the doctor.

By the end of the summer, we had accumulated over twelve hundred 5 x 8 file cards, each containing the abstracted medical history of a longshoreman. These abstracts are now undergoing the sophisticated probing of statistical analysis. However it is already obvious that the

summer's work has raised more problems than it has solved, and what appeared to be an absurdly simple question in June has grown into a series of quite complex questions.

A further comparison of our experiences led naturally to other conclusions. Progress was quicker in the investigation of the acute cephalalgia not only because the etiology could be ascribed primarily to one agent, thereby simplifying study of host variability, but also because there were fewer suspicious variables intervening in the short time between exposure and disease. One could therefore proceed by the same principles used by the London practitioner John Snow, who traced a cholera epidemic to contaminated well water in 1849, before the science of epidemiology or even bacteriology had come into existence. Both investigations involved a Sherlock Holmesian linking of a limited number of variables into a chain of causation.

On the other hand, as we learned, a chronic disease like ASHD develops over a period of years during which the host is exposed to many variables, any number or combination of which might be the etiologic agents. It is the difficulty of weeding out the responsible factors from this multivariate mélange, and the subsequent demonstration of their correlation with disease, that make modern studies of chronic disease plodding, large-scale, and stuffed with statistics.

To attain a reduction of these variables, a significant study population must be numbered in the thousands. Hence, an agency like the Public Health Service, which colligates the experiences of many doctors, has an advantageous position for such investigations.

To conclude, this summer afforded both of us, in addition to a delightful two months in the Queen of American Cities, a glimpse into the growing importance of epidemiology and public health agencies in the investigation of chronic diseases.

# HONORS

*Dr. Trimble*

SIDNEY FARBER, '27, Director of Research at Children's Cancer Research Foundation, Boston, Massachusetts, and Professor of Pathology, Harvard University Medical School at The Children's Hospital, has been appointed to serve on the National Advisory Health Council, Surgeon General Leroy E. Burney of the Public Health Service announced.

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DAVID D. RUTSTEIN, '34, Professor of Preventive Medicine and Head of the Department, Harvard Medical School, won the Benjamin Franklin award for the best article about science or health written during 1957. His prize-winning work was "The Influenza Epidemic," in the August issue of *Harper's Magazine*. Eight Benjamin Franklin Magazine Awards for distinguished writing, editing, and public service are awarded annually under the sponsorship of the University of Illinois.

DR. HARRY C. TRIMBLE received the honorary degree of Doctor of Science from his *Alma Mater*, Cornell College in Mt. Vernon, Iowa, on June 2, 1958. A senior and well-loved professor at Harvard Medical School, Dr. Trimble was the first Edward S. Wood Assistant Professor of Biological Chemistry. Following his retirement in 1955 from this position Dr. Trimble began a second valuable career. As Special Consultant to the Dean on admissions he has been active on the admission Committee and in exploring admission procedures. In addition to carrying on extensive applicant interviews he has done research in correlating the qualifications of applicants and their performance as students in Medical School. Commenting on Dr. Trimble's most recent honor Dr. Berry wrote to President Cole of Cornell College, "All of us who have learned to respect and love Harry Trimble as a superb teacher and devoted friend rejoice at this recognition of his stature in the academic world to which he has contributed so richly."